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ABSTRACT

A State-wide followup, personal interview survey was made of 1,396 Virginia vocational agriculture graduates, from the classes of 1968 through 1972 and representing 34 percent of the total, to ascertain the percentage who made use of 144 content items usually taught in vocational agriculture, and whether used items were used on- or off-the-job. Content items were categorized under: guidance and leadership; livestock, poultry, and their products; plants and soils; agricultural mechanics; operation of agricultural businesses; and general. Data on educational and occupational background for the graduates, and their responses to the instrument, are tabulated. The lengthy discussion of results emphasizes the need for caution in their interpretation, particularly since no claim is made that the sample is representative. The implications of the results for curriculum adjustment are discussed and recommendations made. (Author/NH)

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ASSEMBLING AND USING OCCUPATIONAL DATA CONCERNING FORMER STUDENTS OF VOCATIONAL AGRICULTURE IN VIRGINIA

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Dr. Alfred Krebs conceived the idea of a content-use study while he was a faculty member at the University of Maryland. He was instrumental in convincing the State Department of Education in Virginia to fund a pilot project that was carried out by Dr. John Crunkilton and later, this project was initiated by Dr. Carter Bass.

Credit goes to Drs. Krebs, Crunkilton, and Bass for their advice and assistance. Thanks go to the teachers of agriculture in 104 schools who collected the data, the state supervisors who encouraged them, and to the 1,396 students who provided information.

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Employees on the project were Anne Folsom, Susan Fore, Margaret Cameron, Jim Henderson, and Mack Long.

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CHAPTER I

INTRODUCTION

The term "accountability" as generally used means the efficient use of funds. Accountability of the curriculum concerns whether or not the content taught is used. How much of the content that is generally taught in the programs is used either on the job or off the job?

The Vocational Agriculture program in Virginia had been using a 15-year follow-up of students to determine their employment status. Some dissatisfaction with the system and a desire to also learn the extent to which the content taught was used led to the present state-wide follow-up system in Vocational Agriculture. The demand for accountability was also a factor in deciding to use the new follow-up system.

Statement of the Problem

The major problem was to ascertain the percent of Vocational Agriculture graduates who made use of 144 items of content that were usually taught in departments of Vocational Agriculture and were either used on-the-job or off-the-job by the graduates.

The specific information sought in the study follows in question form:

1. Which items of subject-matter content are used on the job by the greatest number of graduates?
2. Which items of subject-matter content are used on the job by the least number of graduates?
3. What percent of those followed up earn one-half or more of their income from an agricultural occupation?

4. Which items of subject-matter content are used more by individuals who have been out of school longer?
5. How does use of subject-matter content on the job by those classified as having earned over one-half of their income from an agricultural occupation compare with use on the job by the remainder of those surveyed?
6. Which items of subject-matter content are used on the job by more individuals classified as having earned over one-half of their income from an agricultural occupation?
7. What percent of those followed up could be classified as having worked at least part-time in an agricultual occupation?
8. What percent of those followed up work in related mechanics occupations which are not classified as agricultural?
9. Were those who studied Vocational Agriculture longer more likely to have used the items of content on the job?
10. Did those who were classified as having earned more than half their income from an agricultural occupation enroll for more years of agriculture?
11. Did the 974 former students who held at least a part-time job in agriculture use the subject-matter content more than the other classifications of former students followed up?
12. What percent of those followed up enrolled for post-secondary education of any kind?
13. What percent of those followed up enrolled for post-secondary education in agriculture?

Related Studies and Background

Credit for the approach to the type of student follow-up utilized in this study goes to Dr. Alfred H. Krebs[1] who, while at the University of Maryland, developed and tested it in Maryland. John R. Crunkilton[2] modified the model and tested it in three high schools in Virginia. The following year a decision was made to use a portion of the model on a state-wide basis. Major emphasis on the state-wide study was on the content-use aspect of the model.

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[1]A. H. Krebs, Model for Evaluation of Secondary School Programs of Vocational Education in Agriculture. Miscellaneous Publication 733, University of Maryland, College Park, Md., July, 1969.

[2]John R. Crunkilton, Summary Report of the Evaluation of the James Wood High School's Agricultural Education Department. College of Education, Virginia Polytechnic Institute and State University, June, 1971.

CHAPTER II

PROCEDURE

Population Studied

The group studied was 1396 Virginia students from the classes of 1968 through 1971, who had studied three or more years of Vocational Agriculture. The term "class of '68" is used because drop-outs from a particular class were also included. Intentions were to follow up in every school as many as possible of those in all areas of the State who were in the class of 1971 (out of school one year). Schools were randomly assigned to three groups within supervisory areas to follow-up in addition either the 1968, 1969 or 1970 graduation class members. Thus, each school had the responsibility of following up "graduates" of the previous year and those from one other year. Sixty-eight percent (104 out of 153) of the schools returned usable content-use inventories. Approximately one-third of the students eligible for inclusion in the study were followed up.

The composition of the group according to graduating class is shown in Table 1. The composition of the group according to major option followed is shown in Table 2. The composition of the group according to number of jobs held is in Table 3.

Instrument

The instrument is primarily a list of 144 items of content that are taught in the basic agriculture course of study in Virginia. Former students of Vocational Agriculture responded in one of three ways:

TABLE 1

COMPOSITION OF THOSE FOLLOWED UP ACCORDING TO GRADUATION CLASS AND SUPERVISORY AREA

SUPERVISORY AREA	GRADUATION CLASS 1968	1969	1970	1971	1972	TOTAL
APPLACHIAN	36	66	41	138	36	317
BLUE RIDGE	35	5	21	65	3	129
CENTRAL	41	29	39	163	7	279
EASTERN	54	32	12	112	7	217
NORTHERN	19	72	25	130	3	249
SOUTHSIDE	12	33	19	124	17	205
TOTAL	197	237	157	732	73	1396

TABLE 2

COMPOSITION OF THOSE FOLLOWED UP
ACCORDING TO AGRICULTURAL
OPTION STUDIED

AGRICULTURAL OPTION	NUMBER	%
PRODUCTION	1061	76.0
AGRICULTURAL BUSINESS	53	3.8
AGRICULTURAL MACHINERY	94	6.7
CONSERVATION AND FORESTRY	105	7.5
ORNAMENTAL HORTICULTURE	82	5.9
DISADVANTAGED	1	0.1
TOTAL	1396	100.0%

TABLE 3

COMPOSITION OF THOSE FOLLOWED UP
ACCORDING TO NUMBER OF JOBS HELD

NUMBER OF JOBS	NUMBER OF INDIVIDUALS
NONE OR NEGLECTED TO COMPLETE	51
ONE	682
TWO	402
THREE	168
FOUR	63
FIVE OR MORE	30

NOTE: See Table 1 for amount of time students had been out of school. Slightly more than one (1.17) jobs per year had been held by the individuals.

1) they used the item of content on the job, 2) they used the item but not on a job, or 3) they did not use the item. Use of an item of content both on the job and off the job was recorded in the "on-the-job" column.

The items of content were categorized under the following headings: 1) Guidance and Leadership, 2) Livestock and Poultry and Their Products, 3) Plants and Soils, 4) Agricultural Mechanics, 5) Management and Operation of Agricultural Businesses, and 6) General. Additional information to identify the individual, school, county, supervisory area, number of years of agriculture studied, agricultural options studied, jobs held, year of graduation and attendance of post-secondary institutions was collected on the instrument. See Appendix A for a copy of the instrument.

Step-by-Step Procedure

1. A plan was developed for collecting, summarizing, and using the information collected.
2. In each of the six supervisory areas in Virginia, a meeting of agriculture teachers was devoted to explaining the plan and answering teachers' questions.
3. Members of the agricultural education supervisory staff and members of the agriculture teachers advisory committee endorsed the plan.
4. The instrument was prepared.
5. A schedule of students to follow-up was prepared.
6. During the last half of 1972, agriculture teachers personally interviewed their former students of the class of 1971 and one other year, either 1968, 1969, or 1970, according to the schedule referred to in step five and under "Population Studied."

7. The completed instruments were delivered to the area supervisors who, in turn, sent them to the project staff at VPI & SU.
8. Through an inspection of the information on the instrument some judgmental classifications were made. One concerned whether or not a major portion of an individual's income was from an agricultural occupation. The USOE Occupational Classifications served as a guide to what was an agricultural occupation.

   Another classification of respondents made was: 1) working in an agricultural occupation at least part-time; 2) working in a non-agricultural occupation but where mechanical knowledge and skill was used, e.g., mechanic in the military; and 3) non-agricultural.

   Post-secondary study in agriculture was considered to be employment, and the content of the high school course of study was considered to be "used on the job" if it was used in the post-secondary study.
9. The information on the instruments plus the classification information was placed on optical scanning score sheets.
10. The information was transferred by automatic equipment from the optical scanning score sheet to data cards.
11. Summaries of information for each school were run and sent to the head teacher.
12. Summaries of information by supervisory area were made and finally a summary of information for the State was made.
13. Comparisons of content-used by groups of students in the various classifications--years of vocational agriculture, number of years out of school, earning major portion of income from an agricultural

occupation, etc.--were made.

14. Interpretations of school, area and State summaries were made at area meetings of vocational agriculture instructors.

15. The last step was the writing of the final report.

CHAPTER III

THE PRESENTATION AND ANALYSIS OF DATA

No information on an individual school basis and very little on a supervisory area basis will be presented.

This is not an inferential study. Conclusions concern only those in the study. Only 34 percent of the possible students were followed up in the State. The best information for the local school is the local school summary which was sent to them. This was a state-wide study and the best answers to the questions posed in the study are presented here.

1. Which items of subject-matter content are used most on the job by former Vocational Agriculture students?

   Items of content used on the job by at least 1/3 of the individuals studied in order of the highest number of individuals using the items follow:

   1. Using safety equipment and practices in mechanics work
   2. Maintaining, operating and caring for power equipment
   3. Reconditioning and caring for handtools
   4. Locating, applying for and obtaining a job
   5. Repairing, operating and maintaining machinery
   6. Adjusting and/or assembling machinery
   7. Planning for safety (management)
   8. Performing carpentry and other work with wood
   9. Performing cold metal work
   10. Taking an inventory
   11. Keeping and using records

12. Overhauling, maintaining, and using small engines
13. Overhauling, maintaining, and using tractors and stationary engines
14. Welding with electricity (arc welding)
15. Performing electrical wiring
16. Performing sheet metal work
17. Welding with oxy-acetylene gas (gas welding)
18. Providing, maintaining and operating equipment (livestock)

These items are the ones used at least once by the most people. They are not necessarily the ones used the greatest number of hours. Hopefully individuals do not use a great amount of time locating and applying for jobs.

2. Which items of subject-matter content are used by the least number of individuals on the job?

Caution is urged concerning the least-used list of subject matter items. The items could be important in certain parts of the State but not in others. Perhaps students are not obtaining certain kinds of agricultural employment at all, thus showing a low level of use.

Items of subject-matter content used by less than ten percent of the individuals on the job in the order of least to greatest use follow:

1. Conducting plant breeding work
2. Developing and operating an agricultural recreation business
3. Testing milk
4. Producing hybrid and certified seed
5. Propagating plants through grafting and layering, etc.
6. Designing a landscape plan

7. Planning, installing and maintaining an irrigation system
8. Testing soil
9. Registering with breed association
10. Grading (livestock)
11. Inspecting (livestock)
12. Selling supplies and materials used for growing plants
13. Processing for market (livestock)

A complete summary of the number of individual responses to the content-use portion of the instrument, and the percentage of the whole are listed under subject matter categories in rank order according to use on the job in Table 4.

3. What percent of those followed up earned one-half or more of their income from an agricultural occupation?

Those classified as earning more than half of their income from an agricultural occupation were 471 out of 1396 or 33.7 percent. (974 individuals had held an agricultural job.)

4. Which items of subject-matter content are used more on the job by individuals who have been out of school longer?

Analysis by year of graduation was not made for the entire group in one analysis but is available in two parts--those who earn over half of their income from an agricultural occupation and those who did not.

In the guidance and leadership category the items appeared to be related to age for both the 471 who gained most of their income from an agricultural occupation and the 925 who did not. The same held true for the area of agricultural mechanics.

As a practical presentation of information, those items of content

(Narrative continued on page 22)

TABLE 4

1973 SUMMARY OF CONTENT USE IN RANK ORDER OF USE ON THE JOB BY CONTENT AREA

1396 students

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
AREA: GUIDANCE & LEADERSHIP	NO.	%	NO.	%	NO.	%
Locating, applying for, and obtaining job	902	64.6	197	14.1	297	21.3
Serving as an active member of an organization or organized group	322	23.1	461	33.0	613	43.9
Explaining agriculture to an individual or group of people	291	20.8	461	33.0	644	46.1
Explaining farming to an individual or group of people	283	20.3	440	31.5	673	48.2
Participating in a public service activity	280	20.0	428	30.7	688	49.3
Becoming established in a business in a "self-employment" capacity	266	19.1	154	11.0	976	69.9
Explaining agricultural occupations to an individual or group of people	256	18.3	430	30.8	710	50.9
Using parliamentary procedure	230	16.5	482	34.5	684	49.0
Giving a talk before a group of people	222	15.9	364	26.1	810	58.0
Planning a program of work for an organized group	205	14.7	293	21.0	898	64.3
Serving as a member or chairman of a committee	184	13.2	388	27.8	824	59.0
Preparing a display or writing a news article	179	12.8	201	14.4	1016	72.8
Conducting a meeting of a group of people	177	12.7	359	25.7	860	61.6
Serving as an officer of an organization	145	10.4	331	23.7	920	65.9

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
AREA: LIVESTOCK & POULTRY & THEIR PRODUCTS	NO.	%	NO.	%	NO.	%
Providing, maintaining, and operating equipment	460	33.0	399	28.6	537	38.5
Feeding and caring for the young	375	26.9	429	30.7	592	42.4
Feeding and caring for the producing flock or herd	361	25.8	399	28.6	636	45.6
Providing and maintaining housing	355	25.4	419	30.0	622	44.6
Feeding and caring for breeding flock or herd (at any age)	355	25.4	401	28.7	640	45.8
Treating for diseases or parasites	341	24.4	373	26.7	682	48.9
Feeding and caring for the market flock or herd	337	24.1	345	24.7	714	51.1
Purchasing feed and supplies	335	24.0	456	32.7	605	43.3
Identifying breeds and types	329	23.6	493	35.3	574	41.1
Planning for disease or parasite prevention and control	326	23.3	358	25.6	712	51.0
Selling	308	22.1	334	23.9	754	54.0
Identifying diseases or parasites	306	21.9	356	25.5	734	52.6
Determining prices for purchase or sale	302	21.6	346	24.8	747	53.6
Purchasing	295	21.1	354	25.4	747	53.5
Selecting for purchase	293	20.1	353	25.3	750	53.7
Preparing for sale	293	21.0	337	24.1	766	54.9
Transporting	292	20.9	299	21.4	805	57.7
Selecting for sale	287	20.6	298	21.3	811	58.1
Planning and balancing rations	284	20.3	313	22.4	799	57.2
Keeping and using enterprise records	269	19.3	295	21.1	832	59.6
Training and handling	259	18.6	305	21.8	832	59.6

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
	NO.	%	NO.	%	NO.	%
Planning a breeding program and breeding	246	17.6	244	17.5	906	64.9
Judging	218	15.6	320	22.9	858	61.5
Milking	164	11.7	187	13.4	1045	74.9
Marketing	325	23.3	306	21.9	765	54.8
Identifying cuts of meat	160	11.5	311	22.3	925	66.3
Shearing or clipping	145	10.4	134	9.6	1117	80.0
Processing for market	138	9.9	159	11.4	1099	78.7
Inspecting	138	9.9	139	10.0	1119	80.2
Grading	124	8.9	140	10.0	1132	81.1
Registering with breed association	120	8.6	129	9.2	1147	82.2
Testing milk	54	3.9	66	4.7	1276	91.4
AREA: PLANTS & SOILS						
Harvesting	441	31.6	549	39.3	406	29.0
Applying fertilizer	436	31.2	575	41.2	385	27.6
Working the soil	433	31.0	546	39.1	417	29.9
Planting seeds	432	30.9	611	43.8	353	25.3
Preparing soil for planting	424	30.4	555	39.8	417	29.9
Storing	424	30.3	485	34.7	487	34.8
Identifying seeds and plants	392	28.1	518	37.1	486	34.8
Transporting	375	26.9	315	22.6	706	50.6
Selecting and purchasing fertilizer	364	26.1	528	37.8	504	36.1
Controlling brush	362	25.9	443	31.7	591	42.3
Buying and applying chemicals for insect control	358	25.6	448	32.1	590	42.3

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
	NO.	%	NO.	%	NO.	%
Planting seedlings and other plants	354	25.4	552	39.5	490	35.1
Buying and applying chemicals for weed control	352	25.2	413	29.6	631	45.2
Maintaining organic matter in the soil	350	25.0	418	29.9	628	45.0
Identifying weed seeds and plants	335	24.0	479	34.3	582	41.7
Preparing for market	333	23.9	288	20.6	775	55.5
Marketing	325	23.3	306	21.9	765	54.8
Selecting and purchasing	318	22.8	436	31.2	642	46.0
Treating plants for disease control	317	22.7	363	26.0	716	51.3
Managing pastures	316	22.6	357	25.6	723	51.8
Identifying insects	311	22.3	438	31.4	647	46.3
Identifying plant diseases	305	21.8	358	25.6	733	52.5
Taking soil samples	276	19.8	314	22.5	806	57.7
Determining price	262	18.8	306	21.9	828	59.3
Identifying nutrient deficiencies in plants	259	18.6	332	23.8	805	57.7
Caring for a woodlot	243	17.4	311	22.3	842	60.3
Determining soil type	232	16.6	298	21.3	866	62.0
Interpreting soil tests	201	14.4	208	14.9	987	70.7
Blending or mixing fertilizer	199	14.3	242	17.3	955	68.4
Thinning fruit and plants	172	12.3	314	22.5	910	65.2
Drying	161	11.5	173	12.4	1062	76.1
Grading	158	11.3	153	11.0	1085	77.7
Pruning and training	158	11.3	297	21.3	941	67.4
Judging	156	11.2	230	16.5	1010	72.3

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
	NO.	%	NO.	%	NO.	%
Inspecting	155	11.0	132	9.4	1109	79.4
Processing	150	10.7	150	10.7	1096	78.5
Selling supplies and materials used for growing plants	138	9.9	136	9.7	1122	80.4
Testing soil	120	8.6	187	13.4	1089	78.0
Propagating plants through grafting, layering, etc.	76	5.4	142	10.2	1178	84.4
Producing hybrid and certified seed	66	4.7	84	6.0	1246	89.0
Conducting plant breeding work	37	2.7	68	4.9	1291	92.5
AREA: AGRICULTURAL MECHANICS (including related sales and services activities for each item)						
Using safety equipment and practices in mechanics work	1016	72.8	272	19.5	108	7.7
Maintaining, operating, and caring for power equipment	989	70.8	293	21.0	114	8.0
Reconditioning and caring for hand tools	907	65.0	373	26.7	116	8.3
Repairing, operating, and maintaining machinery	833	59.7	335	24.0	228	16.3
Adjusting and/or assembling machinery	764	54.7	305	21.8	327	23.4
Performing carpentry or other work with wood	683	48.9	457	32.7	256	18.3
Performing cold metal work	568	40.7	279	20.0	549	39.3
Overhauling, maintaining, and using small engines	549	39.3	441	31.6	406	29.1
Overhauling, maintaining, and using tractors and stationary engines	542	38.8	364	26.1	490	35.1
Welding with electricity (arc welding)	533	38.2	346	24.8	517	37.0
Performing electrical wiring work	499	35.7	419	30.0	478	34.2

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
	NO.	%	NO.	%	NO.	%
Performing sheet metal work	483	34.6	255	18.3	658	47.1
Welding with oxy-acetylene gas (gas welding)	479	34.3	302	21.6	615	44.0
Performing concrete work	430	30.8	339	24.3	627	45.0
Performing hot metal work	426	30.5	246	17.6	724	51.9
Planning and building fences	400	28.7	451	32.3	545	39.0
Performing plumbing work	401	28.7	348	24.9	647	46.3
Performing masonry work	371	26.6	305	21.8	719	51.5
Servicing and repairing electric motors	350	25.1	264	18.9	782	56.0
Using complex electrical controls	289	20.7	139	10.0	968	69.3
Planning, installing and maintaining a drainage system	282	20.2	204	14.6	910	65.2
Planning and developing a mechanics shop	277	19.8	259	18.6	860	61.6
Planning and installing a water supply system	245	17.6	215	15.4	936	67.0
Planning and building conservation structures	197	14.1	157	11.2	1042	74.6
Planning and using automatic feed handling systems	146	10.5	97	6.9	1153	82.6
Surveying	144	10.3	111	8.0	1141	81.7
Planning, installing, and maintaining an irrigation system	119	8.5	119	8.5	1158	83.0
AREA: MANAGEMENT & OPERATION OF AGRICULTURAL BUSINESSES						
Planning for safety	735	52.7	230	16.5	431	30.9
Taking an inventory	576	41.3	231	16.5	589	42.2
Keeping and using records	562	40.3	340	24.4	494	35.4

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
	NO.	%	NO.	%	NO.	%
Preparing income and social security tax statements	453	32.4	436	31.2	507	36.3
Assisting with managing a business	425	30.4	211	15.1	760	54.4
Promoting sales	384	27.5	126	9.0	886	63.5
Determining need for and purchasing machinery and equipment	372	26.6	335	24.0	689	49.4
Managing employees	355	25.4	109	7.8	932	66.8
Determining need for and selling or purchasing insurance	311	22.3	427	30.6	658	47.1
Determining need for and extending or obtaining credit	298	21.3	359	25.7	739	52.9
Determining need for and securing employees	291	20.8	127	9.1	978	70.1
Preparing or using a lease or agreement	276	19.8	209	15.0	911	65.3
Using knowledge of agricultural law	243	17.4	331	23.7	822	58.9
Planning and using a financial budget	329	23.6	406	29.1	661	47.3
Managing a business	247	17.7	148	10.6	1001	71.7
Determining soil capability	242	17.3	263	18.8	894	64.0
Planning a livestock system	233	16.7	245	17.6	918	65.8
Planning a cropping system	231	16.5	256	18.3	909	65.1
Planning a soil fertility program	222	15.9	252	18.1	922	66.0
Determining need for and purchasing land and buildings	212	15.1	272	19.5	912	65.3
Working with government agricultural programs	210	15.0	139	10.0	1047	75.0
Contracting for production or other project	194	13.9	126	9.0	1076	77.1
Planning a marketing program	172	12.3	164	11.7	1060	75.9

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
	NO.	%	NO.	%	NO.	%
Making a soil conservation plan	147	10.5	158	11.3	1091	78.2
Developing and operating an agricultural recreation business	53	3.8	102	7.3	1241	88.9
AREA: GENERAL						
Raising food for home consumption	320	22.9	709	50.8	367	26.3
Controlling environmental pollution	293	21.0	354	25.4	749	53.7
Planning for and using community services (schools, churches, parks, etc.)	292	20.9	546	39.1	558	40.0
Planning and promoting wildlife conservation	214	15.3	457	32.7	725	51.9
Installing a landscape plan	138	9.9	207	14.8	1051	75.3
Designing a landscape plan	109	7.8	254	18.2	1033	74.0
TOTAL PERCENTAGE		22.6		22.3		54.7

where the percentage of the class of 1971 using the items exceeds those for 1968 will be listed. (The group here is the 471 classified as earning over one-half of their income from an agricultural occupation.)

1. Feeding and caring for the young (livestock)
2. Feeding and caring for producing flock or herd.
3. Providing, maintaining, and operating equipment (livestock)
4. Identifying diseases or parasites (livestock)
5. Keeping and using enterprise records
6. Processing for market (livestock)
7. Transporting (livestock)
8. Milking
9. Planning and using automatic feed handling systems
10. Preparing income and social security tax statements
11. Determining soil capability

On only 11 out of 144 items did more of the recent (1971) graduates who earn over one-half of their income from agriculture use the item on the job more than the 1968 graduates. The situation appeared to be very similar for the 1971 and 1968 group of individuals who were classified as earning less than half of their income from an agricultural occupation.

A comparison of the percent of individuals by year of graduation who used various items of content on the job for 471 individuals who earned more than half of their income from an agricultural occupation is presented in Table 5 and the same information for the remaining 925 individuals is presented in Table 6.

5. How does use of subject-matter content on the job by those classified as having earned over one-half of their income from an agricultural

(Narrative continued on page 39)

TABLE 5

PERCENT OF INDIVIDUALS BY YEAR OF GRADUATION WHO USED VARIOUS ITEMS OF CONTENT ON THE JOB FOR 471 INDIVIDUALS WHO EARN MORE THAN HALF OF THEIR INCOME FROM AN AGRICULTURAL OCCUPATION

CONTENT - USE INVENTORY ITEM	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD				
	Year of Graduation				
AREA: GUIDANCE & LEADERSHIP	1968	1969	1970	1971	1972
Locating, applying for, and obtaining job	78.0	60.0	73.0	59.0	57.0
Becoming established in a business in a "self-employment" capacity	45.0	36.0	35.0	42.0	43.0
Serving as an active member of an organization or organized group	39.0	28.0	38.0	33.0	43.0
Using parliamentary procedure	31.0	19.0	25.0	22.0	29.0
Serving as a member or chairman of a committee	28.0	20.0	19.0	21.0	18.0
Serving as an officer of an organization	20.0	20.0	12.0	13.0	14.0
Conducting a meeting of a group of people	27.0	19.0	10.0	16.0	18.0
Planning a program of work for an organized group	25.0	22.0	17.0	20.0	18.0
Preparing a display or writing a news article	23.0	17.0	17.0	16.0	14.0
Giving a talk before a group of people	33.0	27.0	17.0	19.0	21.0
Participating in a public service activity	36.0	24.0	31.0	26.0	43.0
Explaining farming to an individual or group of people	41.0	42.0	50.0	38.0	46.0
Explaining agriculture to an individual or group of people	47.0	38.0	50.0	41.0	43.0
Explaining agricultural occupations to an individual or group of people	41.0	36.0	42.0	34.0	39.0
Average % of individuals using the items on the job	36.7	29.1	31.1	28.6	31.9

CONTENT - USE INVENTORY ITEM	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD				
	Year of Graduation				
AREA. LIVESTOCK & POULTRY & THEIR PRODUCTS	1968	1969	1970	1971	1972
Identifying breeds and types	63.0	64.0	62.0	58.0	64.0
Judging	44.0	43.0	40.0	39.0	46.0
Selecting for purchase	56.0	58.0	56.0	54.0	46.0
Determining prices for purchase or sale	56.0	56.0	58.0	53.0	57.0
Purchasing	55.0	52.0	58.0	54.0	61.0
Feeding and caring for breeding flock or herd (at any age)	69.0	69.0	69.0	68.0	61.0
Feeding and caring for the young	69.0	74.0	77.0	72.0	64.0
Feeding and caring for the producing flock or herd	66.0	76.0	67.0	68.0	57.0
Feeding and caring for the market flock or herd	63.0	73.0	67.0	63.0	54.0
Planning and balancing rations	58.0	53.0	60.0	54.0	68.0
Purchasing feed and supplies	69.0	69.0	71.0	64.0	75.0
Providing and maintaining housing	70.0	69.0	65.0	67.0	79.0
Providing, maintaining, and operating equipment	69.0	83.0	73.0	75.0	79.0
Planning for disease or parasite prevention and control	66.0	62.0	71.0	64.0	71.0
Treating for diseases or parasites	66.0	70.0	67.0	66.0	68.0
Identifying diseases or parasites	56.0	69.0	56.0	61.0	57.0
Training and handling	55.0	55.0	40.0	51.0	50.0
Preparing for sale	58.0	64.0	60.0	54.0	57.0
Selling	61.0	59.0	62.0	57.0	61.0
Selecting for sale	64.0	58.0	60.0	52.0	57.0
Planning a breeding program and breeding	52.0	51.0	48.0	50.0	50.0

CONTENT - USE INVENTORY ITEM	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD				
	Year of Graduation				
	1968	1969	1970	1971	1972
Keeping and using enterprise records	48.0	52.0	52.0	51.0	54.0
Registering with breed association	30.0	24.0	15.0	25.0	25.0
Identifying cuts of meat	31.0	30.0	25.0	24.0	21.0
Processing for market	22.0	23.0	31.0	23.0	18.0
Transporting	53.0	53.0	56.0	55.0	50.0
Inspecting	30.0	31.0	21.0	23.0	25.0
Grading	30.0	21.0	19.0	22.0	21.0
Testing milk	9.0	8.0	12.0	9.0	18.0
Milking	30.0	28.0	23.0	35.0	32.0
Shearing or clipping	36.0	30.0	21.0	26.0	25.0
AREA: PLANTS & SOILS					
Identifying seeds and plants	77.0	76.0	62.0	73.0	75.0
Selecting and purchasing	69.0	60.0	60.0	62.0	68.0
Judging	30.0	30.0	29.0	29.0	46.0
Determining price	50.0	40.0	48.0	49.0	79.0
Taking soil samples	58.0	57.0	50.0	54.0	57.0
Testing soil	27.0	21.0	25.0	23.0	43.0
Interpreting soil tests	50.0	37.0	38.0	37.0	50.0
Preparing soil for planting	89.0	80.0	69.0	80.0	86.0
Selecting and purchasing fertilizer	77.0	70.0	60.0	71.0	79.0
Applying fertilizer	86.0	83.0	79.0	82.0	86.0
Blending or mixing fertilizer	41.0	38.0	33.0	39.0	39.0
Identifying nutrient deficiencies in plants	58.0	53.0	42.0	51.0	61.0

CONTENT - USE INVENTORY ITEM	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD Year of Graduation				
	1968	1969	1970	1971	1972
Planting seeds	86.0	80.0	75.0	82.0	75.0
Planting seedlings and other plants	77.0	59.0	60.0	73.0	68.0
Propagating plants through grafting, layering, etc.	17.0	12.0	13.0	13.0	14.0
Identifying weed seeds and plants	70.0	65.0	60.0	67.0	64.0
Selling supplies and materials used for growing plants	27.0	21.0	29.0	21.0	18.0
Buying and applying chemicals for weed control	80.0	66.0	60.0	67.0	75.0
Drying	47.0	23.0	27.0	32.0	39.0
Identifying insects	66.0	62.0	48.0	62.0	68.0
Buying and applying chemicals for insect control	75.0	66.0	62.0	69.0	75.0
Identifying plant diseases	64.0	59.0	58.0	61.0	64.0
Treating plants for disease control	70.0	53.0	54.0	65.0	61.0
Harvesting	86.0	84.0	79.0	81.0	79.0
Storing	80.0	78.0	85.0	78.0	82.0
Marketing	70.0	51.0	56.0	65.0	50.0
Preparing for market	72.0	56.0	56.0	65.0	50.0
Transporting	78.0	59.0	67.0	71.0	71.0
Producing hybrid and certified seed	16.0	17.0	10.0	12.0	18.0
Conducting plant breeding work	14.0	10.0	6.0	5.0	11.0
Processing	30.0	21.0	33.0	26.0	32.0
Inspecting	28.0	22.0	31.0	26.0	29.0
Grading	38.0	19.0	35.0	28.0	29.0
Pruning and training	36.0	26.0	31.0	29.0	39.0

CONTENT - USE INVENTORY ITEM	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD Year of Graduation				
	1968	1969	1970	1971	1972
Determining soil type	58.0	44.0	37.0	44.0	50.0
Controlling brush	81.0	62.0	63.0	64.0	75.0
Caring for a woodlot	48.0	43.0	46.0	44.0	61.0
Working the soil	91.0	80.0	77.0	78.0	79.0
Managing pastures	72.0	58.0	58.0	64.0	71.0
Maintaining organic matter in the soil	75.0	67.0	62.0	64.0	79.0
Thinning fruit and plants	28.0	29.0	25.0	35.0	54.0
AREA: AGRICULTURAL MECHANICS (including related sales and services activities for each item)					
Using safety equipment and practices in mechanics work	94.0	86.0	88.0	87.0	82.0
Reconditioning and caring for hand tools	97.0	87.0	87.0	82.0	89.0
Maintaining, operating, and caring for power equipment	94.0	92.0	85.0	87.0	86.0
Performing carpentry or other work with wood	86.0	73.0	75.0	74.0	75.0
Performing cold metal work	70.0	65.0	50.0	56.0	54.0
Performing sheet metal work	61.0	44.0	44.0	46.0	39.0
Performing hot metal work	56.0	37.0	38.0	40.0	43.0
Performing masonry work	53.0	41.0	37.0	45.0	46.0
Performing concrete work	66.0	41.0	50.0	52.0	50.0
Performing plumbing work	64.0	47.0	54.0	42.0	46.0
Performing electrical wiring work	70.0	53.0	54.0	53.0	54.0
Servicing and repairing electric motors	50.0	37.0	44.0	34.0	50.0
Welding with oxy-acetylene gas (gas welding)	53.0	50.0	46.0	39.0	50.0

CONTENT - USE INVENTORY ITEM	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD Year of Graduation				
	1968	1969	1970	1971	1972
Welding with electricity (arc welding)	61.0	64.0	52.0	51.0	50.0
Adjusting and/or assembling machinery	88.0	83.0	73.0	76.0	71.0
Repairing, operating, and maintaining machinery	95.0	90.0	83.0	82.0	86.0
Overhauling, maintaining, and using small engines	73.0	67.0	52.0	67.0	68.0
Overhauling, maintaining, and using tractors and stationary engines	75.0	70.0	60.0	70.0	68.0
Planning, installing and maintaining a drainage system	52.0	38.0	42.0	34.0	32.0
Planning and building conservation structures	44.0	34.0	23.0	27.0	21.0
Planning, installing, and maintaining an irrigation system	19.0	21.0	21.0	17.0	18.0
Planning and installing a water supply system	44.0	38.0	29.0	34.0	21.0
Planning and developing a mechanics shop	48.0	36.0	37.0	37.0	29.0
Using complex electrical controls	36.0	29.0	19.0	29.0	18.0
Planning and using automatic feed handling systems	20.0	24.0	21.0	26.0	14.0
Planning and building fences	73.0	77.0	62.0	69.0	86.0
Surveying	17.0	19.0	12.0	13.0	36.0
Average % of individuals using the items on the job	61.4	53.4	49.6	50.7	51.2
AREA: MANAGEMENT & OPERATION OF AGRICULTURAL BUSINESSES					
Keeping and using records	70.0	70.0	69.0	68.0	68.0
Preparing income and social security tax statements	48.0	59.0	60.0	49.0	54.0

CONTENT - USE INVENTORY ITEM	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD Year of Graduation				
	1968	1969	1970	1971	1972
Planning a cropping system	50.0	43.0	42.0	47.0	57.0
Planning a livestock system	48.0	44.0	46.0	48.0	50.0
Developing and operating an agricultural recreation business	9.0	10.0	6.0	8.0	25.0
Planning and using a financial budget	48.0	49.0	40.0	45.0	46.0
Making a soil conservation plan	30.0	26.0	23.0	28.0	36.0
Working with government agricultural programs	50.0	45.0	37.0	34.0	50.0
Determining need for and extending or obtaining credit	50.0	44.0	42.0	38.0	54.0
Planning a marketing program	42.0	35.0	38.0	30.0	18.0
Using knowledge of agricultural law	47.0	47.0	42.0	43.0	50.0
Determining need for and selling or purchasing insurance	59.0	45.0	48.0	44.0	32.0
Determining need for and purchasing machinery and equipment	63.0	62.0	60.0	54.0	61.0
Determining need for and purchasing land and buildings	36.0	40.0	44.0	35.0	36.0
Managing a business	42.0	29.0	37.0	34.0	46.0
Assisting with managing a business	64.0	59.0	46.0	58.0	61.0
Determining soil capability	47.0	44.0	44.0	48.0	50.0
Planning a soil fertility program	44.0	40.0	37.0	48.0	46.0
Taking an inventory	66.0	65.0	60.0	59.0	61.0
Preparing or using a lease or agreement	45.0	49.0	40.0	39.0	43.0
Determining need for and securing employees	48.0	41.0	37.0	37.0	43.0
Managing employees	56.0	42.0	37.0	44.0	50.0
Contracting for production or other project	39.0	27.0	31.0	24.0	32.0

CONTENT - USE INVENTORY ITEM	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD				
	Year of Graduation				
	1968	1969	1970	1971	1972
Planning for safety	86.0	72.0	77.0	77.0	64.0
Promoting sales	50.0	42.0	48.0	41.0	32.0
Average % of individuals using the items on the job	49.5	45.2	43.6	43.2	46.6
AREA: GENERAL					
Planning for and using community services (schools, churches, parks, etc.)	45.0	38.0	40.0	39.0	50.0
Raising food for home consumption	66.0	59.0	54.0	55.0	64.0
Planning and promoting wildlife conservation	42.0	38.0	31.0	32.0	68.0
Designing a landscape plan	17.0	19.0	13.0	15.0	25.0
Installing a landscape plan	20.0	23.0	21.0	18.0	21.0
Controlling environmental pollution	47.0	36.0	42.0	37.0	57.0
Average % of individuals using the items on the job. TOTAL OF ALL 144	57.7	47.6	46.0	46.7	50.0

TABLE 6

PERCENT OF INDIVIDUALS BY YEAR OF GRADUATION WHO USED VARIOUS ITEMS OF CONTENT ON THE JOB FOR 925 INDIVIDUALS WHO EARN LESS THAN HALF OF THEIR INCOME FROM AN AGRICULTURAL OCCUPATION

CONTENT - USE INVENTORY ITEM	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD				
	Year of Graduation				
AREA: GUIDANCE & LEADERSHIP	1968	1969	1970	1971	1972
Locating, applying for, and obtaining job	70.0	66.0	67.0	63.0	54.0
Becoming established in a business in a "self-employment" capacity	18.0	20.0	17.0	20.0	18.0
Serving as an active member of an organization or organized group	28.0	24.0	24.0	21.0	28.0
Using parliamentary procedure	23.0	16.0	15.0	15.0	20.0
Serving as a member or chairman of a committee	18.0	14.0	12.0	12.0	11.0
Serving as an officer of an organization	14.0	14.0	8.0	9.0	6.0
Conducting a meeting of a group of people	23.0	16.0	8.0	10.0	10.0
Planning a program of work for an organized group	24.0	18.0	10.0	12.0	11.0
Preparing a display or writing a news article	19.0	12.0	12.0	12.0	10.0
Giving a talk before a group of people	27.0	19.0	13.0	13.0	13.0
Participating in a public service activity	28.0	19.0	21.0	17.0	24.0
Explaining farming to an individual or group of people	19.0	24.0	23.0	18.0	24.0
Explaining agriculture to an individual or group of people	23.0	24.0	23.0	19.0	23.0
Explaining agricultural occupations to an individual or group of people	20.0	21.0	19.0	17.0	21.0
Average % of individuals using the items on the job	25.2	21.9	19.4	18.4	19.5

CONTENT - USE INVENTORY	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD				
	Year of Graduation				
AREA: LIVESTOCK & POULTRY & THEIR PRODUCTS	1968	1969	1970	1971	1972
Identifying breeds and types	23.0	26.0	23.0	23.0	27.0
Judging	15.0	17.0	15.0	15.0	18.0
Selecting for purchase	19.0	24.0	22.0	20.0	18.0
Determining prices for purchase or sale	20.0	24.0	22.0	21.0	23.0
Purchasing	19.0	23.0	22.0	20.0	24.0
Feeding and caring for breeding flock or heard (at any age)	24.0	29.0	25.0	25.0	25.0
Feeding and caring for the young	24.0	31.0	28.0	26.0	27.0
Feeding and caring for the producing flock or herd	23.0	31.0	25.0	25.0	24.0
Feeding and caring for the market flock or herd	22.0	29.0	24.0	23.0	23.0
Planning and balancing rations	19.0	23.0	21.0	19.0	27.0
Purchasing feed and supplies	23.0	27.0	27.0	22.0	30.0
Providing and maintaining housing	24.0	27.0	25.0	24.0	34.0
Providing, maintaining, and operating equipment	31.0	38.0	29.0	32.0	37.0
Planning for disease or parasite prevention and control	21.0	26.0	25.0	22.0	30.0
Treating for diseases or parasites	22.0	29.0	24.0	23.0	28.0
Identifying diseases or parasites	20.0	27.0	19.0	21.0	24.0
Training and handling	18.0	22.0	15.0	18.0	21.0
Preparing for sale	20.0	25.0	22.0	20.0	23.0
Selling	21.0	24.0	23.0	21.0	24.0
Selecting for sale	21.0	23.0	22.0	19.0	24.0
Planning a breeding program and breeding	17.0	19.0	17.0	17.0	20.0

CONTENT - USE INVENTORY	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD Year of Graduation				
	1968	1969	1970	1971	1972
Keeping and using enterprise records	17.0	22.0	19.0	19.0	24.0
Registering with breed association	10.0	9.0	5.0	9.0	10.0
Identifying cuts of meat	13.0	15.0	14.0	10.0	8.0
Processing for market	8.0	11.0	15.0	9.0	8.0
Transporting	20.0	21.0	24.0	20.0	21.0
Inspecting	10.0	13.0	11.0	9.0	10.0
Grading	11.0	8.0	9.0	8.0	10.0
Testing milk	4.0	3.0	4.0	4.0	7.0
Milking	10.0	12.0	8.0	13.0	14.0
Shearing or clipping	12.0	13.0	7.0	10.0	10.0
Average % of individuals using the items on the job	18.1	21.6	18.4	18.3	21.1
AREA: PLANTS & SOILS					
Identifying seeds and plants	28.0	30.0	25.0	27.0	34.0
Selecting and purchasing	25.0	24.0	21.0	22.0	28.0
Judging	11.0	12.0	10.0	10.0	18.0
Determining price	19.0	16.0	19.0	18.0	32.0
Taking soil samples	20.0	23.0	19.0	18.0	24.0
Testing soil	9.0	8.0	8.0	8.0	18.0
Interpreting soil tests	18.0	15.0	13.0	13.0	20.0
Preparing soil for planting	32.0	32.0	26.0	30.0	37.0
Selecting and purchasing fertilizer	27.0	27.0	22.0	26.0	34.0
Applying fertilizer	30.0	33.0	29.0	30.0	38.0
Blending or mixing fertilizer	14.0	16.0	13.0	14.0	17.0
Identifying nutrient deficiencies in plants	20.0	21.0	15.0	18.0	27.0

CONTENT - USE INVENTORY	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD				
	Year of Graduation				
	1968	1969	1970	1971	1972
Planting seeds	30.0	33.0	29.0	31.0	32.0
Planting seedlings and other plants	26.0	24.0	22.0	26.0	30.0
Propagating plants through grafting, layering, etc.	6.0	5.0	6.0	5.0	10.0
Identifying weed seeds and plants	24.0	25.0	22.0	24.0	28.0
Selling supplies and materials used for growing plants	11.0	11.0	13.0	8.0	10.0
Buying and applying chemicals for weed control	27.0	26.0	23.0	24.0	31.0
Drying	16.0	9.0	10.0	11.0	15.0
Identifying insects	23.0	24.0	18.0	22.0	30.0
Buying and applying chemicals for insect control	27.0	26.0	24.0	25.0	32.0
Identifying plant diseases	22.0	22.0	20.0	21.0	28.0
Treating plants for disease control	24.0	21.0	20.0	23.0	27.0
Harvesting	31.0	35.0	31.0	30.0	34.0
Storing	29.0	32.0	32.0	29.0	35.0
Marketing	25.0	20.0	24.0	24.0	21.0
Preparing for market	26.0	22.0	24.0	24.0	21.0
Transporting	29.0	25.0	28.0	26.0	31.0
Producing hybrid and certified seed	6.0	6.0	4.0	4.0	7.0
Conducting plant breeding work	5.0	4.0	3.0	2.0	4.0
Processing	12.0	10.0	14.0	10.0	15.0
Inspecting	13.0	10.0	15.0	10.0	13.0
Grading	14.0	8.0	13.0	11.0	15.0
Pruning and training	12.0	9.0	12.0	11.0	20.0

CONTENT - USE INVENTORY	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD				
	Year of Graduation				
	1968	1969	1970	1971	1972
Determining soil type	21.0	17.0	12.0	16.0	21.0
Controlling brush	29.0	24.0	24.0	25.0	35.0
Caring for a woodlot	18.0	17.0	18.0	16.0	28.0
Working the soil	33.0	32.0	29.0	30.0	37.0
Managing pastures	24.0	22.0	20.0	23.0	30.0
Maintaining organic matter in the soil	26.0	26.0	23.0	24.0	32.0
Thinning fruit and plants	11.0	11.0	10.0	13.0	23.0
Average % of individuals using the items on the job	20.8	19.8	18.0	19.1	19.1
AREA: AGRICULTURAL MECHANICS (including related sales and services activities for each item)					
Using safety equipment and practices in mechanics work	79.0	75.0	74.0	71.0	66.0
Reconditioning and caring for hand tools	71.0	72.0	67.0	61.0	66.0
Maintaining, operating, and caring for power equipment	77.0	75.0	71.0	69.0	65.0
Performing carpentry or other work with wood	53.0	49.0	48.0	48.0	55.0
Performing cold metal work	46.0	45.0	39.0	39.0	30.0
Performing sheet metal work	43.0	35.0	33.0	34.0	21.0
Performing hot metal work	40.0	29.0	27.0	30.0	25.0
Performing masonry work	35.0	25.0	25.0	26.0	27.0
Performing concrete work	42.0	25.0	32.0	30.0	30.0
Performing plumbing work	39.0	28.0	30.0	26.0	28.0
Performing electrical wiring work	47.0	35.0	32.0	35.0	31.0
Servicing and repairing electric motors	39.0	24.0	25.0	22.0	27.0

CONTENT - USE INVENTORY	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD Year of Graduation				
	1968	1969	1970	1971	1972
Welding with oxy-acetylene gas (gas welding)	41.0	35.0	36.0	33.0	27.0
Welding with electricity (arc welding)	42.0	43.0	37.0	37.0	27.0
Adjusting and/or assembling machinery	62.0	57.0	51.0	54.0	44.0
Repairing, operating, and maintaining machinery	63.0	65.0	56.0	59.0	51.0
Overhauling, maintaining, and using small engines	45.0	38.0	35.0	40.0	37.0
Overhauling, maintaining, and using tractors and stationary engines	41.0	39.0	36.0	40.0	31.0
Planning, installing and maintaining a drainage system	27.0	21.0	20.0	19.0	14.0
Planning and building conservation structures	21.0	17.0	10.0	13.0	8.0
Planning and installing a water supply system	24.0	19.0	15.0	17.0	11.0
Planning and developing a mechanics shop	26.0	21.0	19.0	18.0	15.0
Using complex electrical controls	26.0	26.0	14.0	20.0	14.0
Planning and using automatic feed handling systems	10.0	14.0	8.0	10.0	7.0
Planning and building fences	29.0	32.0	25.0	27.0	38.0
Surveying	17.0	12.0	8.0	8.0	18.0
Average % of individuals using the items on the job	40.5	35.7	32.6	33.1	30.4
AREA: MANAGEMENT & OPERATION OF AGRICULTURAL BUSINESSES					
Keeping and using records	47.0	38.0	41.0	39.0	32.0
Preparing income and social security tax statements	30.0	34.0	34.0	33.0	27.0

CONTENT - USE INVENTORY	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD				
	Year of Graduation				
	1968	1969	1970	1971	1972
Planning a cropping system	17.0	16.0	15.0	16.0	23.0
Planning a livestock-system	16.0	16.0	17.0	17.0	20.0
Developing and operating an agricultural recreation business	4.0	4.0	3.0	4.0	10.0
Planning and using a financial budget	22.0	24.0	25.0	23.0	25.0
Making a soil conservation plan	10.0	10.0	9.0	11.0	14.0
Working with government agricultural programs	19.0	18.0	14.0	13.0	20.0
Determining need for and extending or obtaining credit	23.0	23.0	24.0	20.0	24.0
Planning a marketing program	14.0	14.0	16.0	11.0	8.0
Using knowledge of agricultural law	18.0	20.0	16.0	16.0	23.0
Determining need for and selling or purchasing insurance	26.0	22.0	21.0	22.0	17.0
Determining need for and purchasing machinery and equipment	29.0	30.0	26.0	25.0	27.0
Determining need for purchasing land and buildings	14.0	17.0	17.0	14.0	20.0
Managing a business	20.0	16.0	20.0	17.0	21.0
Assisting with managing a business	33.0	35.0	29.0	29.0	31.0
Determining soil capability	17.0	17.0	17.0	17.0	24.0
Planning a soil fertility program	15.0	15.0	13.0	17.0	21.0
Taking an inventory	42.0	43.0	47.0	39.0	39.0
Preparing or using a lease or agreement	21.0	23.0	22.0	18.0	23.0
Determining need for and securing employees	24.0	21.0	24.0	19.0	23.0
Managing employees	31.0	26.0	25.0	24.0	24.0
Contracting for production or other project	18.0	15.0	13.0	12.0	17.0

CONTENT - USE INVENTORY	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD				
	Year of Graduation				
	1968	1969	1970	1971	1972
Planning for safety	60.0	51.0	50.0	52.0	44.0
Promoting sales	29.0	28.0	33.0	27.0	21.0
Average % of individuals using the items on the job	23.9	23.0	22.8	21.4	23.1
AREA: GENERAL					
Planning for and using community services (schools, churches, parks, etc.)	27.0	19.0	24.0	19.0	25.0
Raising food for home consumption	24.0	25.0	24.0	21.0	31.0
Planning and promoting wildlife conservation	18.0	16.0	14.0	13.0	31.0
Designing a landscape plan	8.0	9.0	8.0	7.0	13.0
Installing a landscape plan	11.0	11.0	11.0	9.0	11.0
Controlling environmental pollution	28.0	18.0	20.0	20.0	25.0
Average % of individuals using the items on the job. TOTAL OF ALL 144	24.6	23.8	23.1	24.7	23.5

occupation compare with use on the job by the remainder of those surveyed?

Use of the items of content by the 471 classified as earning over one-half of their income from agriculture was nearly five times greater. The average percent of those using the items on the job was 47.8 percent versus 9.9 percent. Table 7 contains the average percent of use on the job, off the job, and not at all for the 471, the 925, and the 1396 individuals. Only one item out of 144, "locating, applying for, and obtaining a job," was used more on the job by the 925 individuals who earned less than half of their income from agriculture than the remaining 471 individuals.

A complete summary for the three categories of use giving the number and percent of individuals using the items "on the job," "used, but not in jobs held," and "not used" for the 471 individuals who earned the major portion of their income from an agricultural occupation is in Table 8, and the same information for the remaining 925 individuals is in Table 9.

6. Which items of subject-matter content are used on the job by more individuals classified as having earned over one-half of their income from an agricultural occupation?

The data are presented as rank-ordered items by content areas (categories) in Table 10.

7. What percent of those followed up could be classified as having worked at least part-time in an agricultural occupation? 70 percent.

Apparently many former students lived at home while working away from home. Many who had non-agriculture jobs reported that they came in contact with various farm animals and crops and that they engaged in several activities on the list. If the individuals are earning board and room for such

(Narrative continued on page 64)

TABLE 7

AVERAGE PERCENT OF USE OF 144 CONTENT ITEMS BY 471 INDIVIDUALS CLASSIFIED AS EARNING OVER HALF OF THEIR INCOME FROM AGRICULTURE, THE 925 WHO DO NOT AND THE TOTAL GROUP ON THE JOB, OFF THE JOB, AND NOT AT ALL

USE	INDIVIDUALS		
	More than 50% income from Ag. 471	Less than 50% income from Ag. 925	All 1396
Used in job held	48%	10%	23%
Used, but not in job held	12%	27%	22%
Did not use	40%	63%	55%

TABLE 8

NUMBER AND PERCENT OF INDIVIDUALS WHO EARNED THE MAJOR PORTION OF THEIR INCOME FROM AN AGRICULTURAL OCCUPATION, USING SUBJECT MATTER CONTENT ON THE JOB, OFF THE JOB OR NOT AT ALL

N = 471

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
AREA: GUIDANCE & LEADERSHIP	NO.	%	NO.	%	NO.	%
Locating, applying for, and obtaining job	299	63	51	11	121	26
Becoming established in a business in a "self-employment" capacity	192	41	49	10	230	49
Serving as an active member of an organization or organized group	162	34	145	31	164	35
Using parliamentary procedure	109	23	145	31	217	46
Serving as a member or chairman of a committee	101	21	130	28	240	51
Serving as an officer of an organization	72	15	109	23	290	62
Conducting a meeting of a group of people	82	17	125	27	264	56
Planning a program of work for an organized group	96	20	100	21	275	59
Preparing a display or writing a news article	83	18	70	15	318	67
Giving a talk before a group of people	104	22	121	26	246	52
Participating in a public service activity	135	29	132	28	204	43
Explaining farming to an individual or group of people	192	41	134	28	145	31
Explaining agriculture to an individual or group of people	199	42	124	26	148	31
Explaining agricultural occupations to an individual or group of people	173	37	121	26	177	38

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
AREA: LIVESTOCK & POULTRY & THEIR PRODUCTS	NO.	%	NO.	%	NO.	%
Identifying breeds and types	284	60	83	18	104	22
Judging	194	41	73	15	204	43
Selecting for purchase	259	55	65	14	147	31
Determining prices for purchase or sale	258	55	58	12	155	33
Purchasing	257	55	56	12	158	33
Feeding and caring for breeding flock or herd (at any age)	321	68	43	9	107	22
Feeding and caring for the young	339	72	50	11	82	18
Feeding and caring for the producing flock or herd	324	69	48	10	99	21
Feeding and caring for the market flock or herd	305	65	46	10	120	26
Planning and balancing rations	262	56	56	12	153	32
Purchasing feed and supplies	315	67	62	13	94	20
Providing and maintaining housing	321	68	55	12	95	20
Providing, maintaining, and operating equipment	356	76	41	9	74	16
Planning for disease or parasite prevention and control	306	65	51	11	114	24
Treating for diseases or parasites	315	67	52	11	104	23
Identifying diseases or parasites	287	61	51	11	133	29
Training and handling	241	51	52	11	178	38
Preparing for sale	268	57	55	12	148	32
Selling	277	59	52	11	142	30
Selecting for sale	265	56	49	10	157	33
Planning a breeding program and breeding	237	50	44	9	190	40

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
Keeping and using enterprise records	242	51	61	13	168	36
Registering with breed association	115	24	38	8	318	68
Identifying cuts of meat	122	26	84	18	265	56
Processing for market	110	23	47	10	314	66
Transporting	255	54	40	8	176	38
Inspecting	119	25	38	8	314	66
Grading	106	23	46	10	319	68
Testing milk	45	10	22	5	404	86
Milking	148	31	33	7	290	62
Shearing or clipping	130	28	32	7	309	66
AREA: PLANTS & SOILS						
Identifying seeds and plants	343	73	52	11	76	16
Selecting and purchasing	295	63	54	11	122	26
Judging	144	31	63	13	264	56
Determining price	232	49	55	12	184	39
Taking soil samples	257	55	48	10	166	35
Testing soil	115	24	45	10	311	66
Interpreting soil tests	188	40	48	10	235	50
Preparing soil for planting	377	80	45	10	49	10
Selecting and purchasing fertilizer	332	70	54	11	85	18
Applying fertilizer	389	83	41	9	41	8
Blending or mixing fertilizer	181	38	37	8	253	53
Identifying nutrient deficiencies in plants	246	52	50	11	175	38
Planting seeds	382	81	54	11	35	8

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
Planting seedlings and other plants	324	69	65	14	82	17
Propagating plants through grafting, layering, etc.	63	13	31	7	177	80
Identifying weed seeds and plants	310	66	62	13	99	21
Selling supplies and materials used for growing plants	106	23	37	8	328	69
Buying and applying chemicals for weed control	320	68	48	10	103	22
Drying	151	32	32	7	288	61
Identifying insects	287	61	61	13	123	26
Buying and applying chemicals for insect control	323	69	48	10	100	21
Identifying plant diseases	285	61	55	12	131	28
Treating plants for disease control	291	62	48	10	132	28
Harvesting	384	82	49	10	38	8
Storing	371	79	46	10	54	11
Marketing	288	61	39	8	144	30
Preparing for market	292	62	38	8	141	30
Transporting	325	69	27	6	119	25
Producing hybrid and certified seed	64	14	22	5	385	82
Conducting plant breeding work	35	7	19	4	417	89
Processing	126	27	26	6	319	68
Inspecting	123	26	30	6	318	67
Grading	133	28	33	7	305	64
Pruning and training	142	30	62	13	267	56
Determining soil type	213	45	65	14	193	41
Controlling brush	313	66	57	12	101	21

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
	NO.	%	NO.	%	NO.	%
Caring for a woodlot	216	46	68	14	187	39
Working the soil	375	80	48	10	48	10
Managing pastures	300	64	57	12	114	24
Maintaining organic matter in the soil	314	67	55	12	102	22
Thinning fruit and plants	155	33	67	14	249	53
AREA: AGRICULTURAL MECHANICS (including related sales and services activities for each item)						
Using safety equipment and practices in mechanics work	411	87	33	7	27	6
Reconditioning and caring for hand tools	405	86	40	8	26	5
Maintaining, operating, and caring for power equipment	415	88	30	6	26	5
Performing carpentry or other work with wood	357	76	66	14	48	10
Performing cold metal work	277	59	53	11	141	30
Performing sheet metal work	221	47	68	14	182	38
Performing hot metal work	197	42	55	12	219	47
Performing masonry work	210	45	59	13	202	43
Performing concrete work	242	51	57	12	172	37
Performing plumbing work	223	47	69	15	179	38
Performing electrical wiring work	262	56	89	19	120	26
Servicing and repairing electric motors	184	39	56	12	231	49
Welding with oxy-acetylene gas (gas welding)	210	45	53	11	208	45
Welding with electricity (arc welding)	258	55	59	13	154	32
Adjusting and/or assembling machinery	368	78	41	9	62	13

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
	NO.	%	NO.	%	NO.	%
Repairing, operating, and maintaining machinery	402	85	35	7	34	8
Overhauling, maintaining, and using small engines	312	66	71	15	88	19
Overhauling, maintaining, and using tractors and stationary engines	327	67	51	11	93	20
Planning, installing and maintaining a drainage system	180	38	52	11	239	51
Planning and building conservation structures	141	30	48	10	282	60
Planning, installing, and maintaining an irrigation system	88	19	30	6	353	75
Planning and installing a water supply system	163	35	46	10	262	56
Planning and developing a mechanics shop	179	38	54	11	238	50
Using complex electrical controls	132	28	44	9	295	63
Planning and using automatic feed handling systems	111	24	31	7	329	70
Planning and building fences	335	71	50	11	86	19
Surveying	74	16	40	8	357	75
AREA: MANAGEMENT & OPERATION OF AGRICULTURAL BUSINESSES						
Keeping and using records	324	69	45	10	102	22
Preparing income and social security tax statements	247	52	88	19	136	29
Planning a cropping system	221	47	54	11	196	42
Planning a livestock system	222	47	55	12	194	41
Developing and operating an agricultural recreation business	45	10	33	7	393	84

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
	NO.	%	NO.	%	NO.	%
Planning and using a financial budget	215	46	82	17	174	36
Making a soil conservation plan	131	28	49	10	291	61
Working with government agricultural programs	186	39	33	7	252	54
Determining need for and extending or obtaining credit	199	42	80	17	192	41
Planning a marketing program	154	33	41	9	276	59
Using knowledge of agricultural law	209	44	73	15	189	40
Determining need for and selling or purchasing insurance	216	46	92	20	163	34
Determining need for and purchasing machinery and equipment	272	58	62	13	137	20
Determining need for and purchasing land and buildings	174	37	60	13	237	50
Managing a business	166	35	41	9	264	56
Assisting with managing a business	272	58	48	10	151	32
Determining soil capability	220	47	63	13	188	40
Planning a soil fertility program	210	45	53	11	208	44
Taking an inventory	288	61	40	8	143	30
Preparing or using a lease or agreement	199	42	41	9	231	49
Determining need for and securing employees	187	40	29	6	255	54
Managing employees	210	45	29	6	232	49
Contracting for production or other project	131	28	35	7	305	65
Planning for safety	359	76	29	6	83	17
Promoting sales	200	42	37	8	234	49

AREA: GENERAL

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
	NO.	%	NO.	%	NO.	%
Planning for and using community services (schools, churches, parks, etc.)	192	41	139	30	140	30
Raising food for home consumption	272	58	133	28	66	14
Planning and promoting wildlife conservation	174	37	128	27	169	35
Designing a landscape plan	78	17	81	17	312	66
Installing a landscape plan	94	20	59	13	318	67
Controlling environmental pollution	187	40	75	16	209	45
Average % of individuals using the item on the job.		47.8		12.3		39.8

TABLE 9

NUMBER AND PERCENT OF INDIVIDUALS
THAT DID NOT EARN THE MAJOR PORTION OF THEIR
FROM AN AGRICULTURAL OCCUPATION, USING SUBJECT MATTER
CONTENT ON THE JOB, OFF THE JOB, AND NOT AT ALL

N = 925

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
AREA: GUIDANCE & LEADERSHIP	NO.	%	NO.	%	NO.	%
Locating, applying for, and obtaining job	604	65	145	16	176	19
Becoming established in a business in a "self-employment" capacity	74	8	105	11	746	81
Serving as an active member of an organization or organized group	162	18	313	34	450	49
Using parliamentary procedure	121	13	334	36	470	51
Serving as a member or chairman of a committee	84	9	257	28	584	64
Serving as an officer of an organization	73	8	218	24	634	68
Conducting a meeting of a group of people	94	10	231	25	600	65
Planning a program of work for an organized group	107	12	191	21	627	68
Preparing a display or writing a news article	96	10	128	14	701	76
Giving a talk before a group of people	115	12	242	26	568	61
Participating in a public service activity	144	16	293	32	488	53
Explaining farming to an individual or group of people	89	10	304	33	532	58
Explaining agriculture to an individual or group of people	94	10	335	36	496	54
Explaining agricultural occupations to an individual or group of people	81	9	310	34	534	58

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
AREA: LIVESTOCK & POULTRY & THEIR PRODUCTS	NO.	%	NO.	%	NO.	%
Identifying breeds and types	43	5	409	44	473	51
Judging	22	2	246	27	657	71
Selecting for purchase	31	3	290	31	604	66
Determining prices for purchase or sale	41	4	289	31	594	64
Purchasing	37	4	298	32	590	64
Feeding and caring for breeding flock or herd (at any age)	33	4	356	38	536	58
Feeding and caring for the young	35	4	379	41	511	55
Feeding and caring for the producing flock or herd	36	4	349	38	540	59
Feeding and caring for the market flock or herd	31	3	297	32	597	65
Planning and balancing rations	20	2	258	28	647	69
Purchasing feed and supplies	20	2	393	42	512	55
Providing and maintaining housing	34	4	363	39	528	57
Providing, maintaining, and operating equipment	104	11	359	39	462	50
Planning for disease or parasite prevention and control	21	2	305	33	599	64
Treating for diseases or parasites	25	3	322	35	578	62
Identifying diseases or parasites	19	2	304	33	602	65
Training and handling	18	2	253	27	654	70
Preparing for sale	26	3	281	30	618	67
Selling	30	3	282	30	613	66
Selecting for sale	24	3	249	27	652	70
Planning a breeding program and breeding	8	1	201	22	716	78

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
	NO.	%	NO.	%	NO.	%
Keeping and using enterprise records	27	3	234	25	664	72
Registering with breed association	5	1	91	10	829	89
Identifying cuts of meat	37	4	227	25	661	72
Processing for market	27	3	115	12	783	84
Transporting	37	4	259	28	629	68
Inspecting	19	2	102	11	804	87
Grading	18	2	94	10	812	88
Testing milk	9	1	44	5	872	94
Milking	16	2	152	16	757	82
Shearing or clipping	14	2	101	11	810	88
AREA: PLANTS & SOILS						
Identifying seeds and plants	47	5	467	50	411	44
Selecting and purchasing	23	2	380	41	522	57
Judging	11	1	168	18	746	81
Determining price	29	3	252	27	644	70
Taking soil samples	18	2	266	29	641	69
Testing soil	6	1	143	15	776	84
Interpreting soil tests	12	1	159	17	754	82
Preparing soil for planting	45	5	510	55	370	40
Selecting and purchasing fertilizer	31	3	476	51	418	45
Applying fertilizer	46	5	538	58	341	37
Blending or mixing fertilizer	19	2	205	22	701	76
Identifying nutrient deficiencies in plants	15	2	280	30	630	68
Planting seeds	48	5	560	61	317	35

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
	NO.	%	NO.	%	NO.	%
Planting seedlings and other plants	29	3	488	53	408	44
Propagating plants through grafting, layering, etc.	12	1	110	12	847	88
Identifying weed seeds and plants	23	2	418	45	484	52
Selling supplies and materials used for growing plants	32	3	98	11	795	86
Buying and applying chemicals for weed control	30	3	366	40	529	57
Drying	9	1	141	15	775	84
Identifying insects	23	2	377	41	525	56
Buying and applying chemicals for insect control	33	4	402	43	490	53
Identifying plant diseases	18	2	304	33	603	65
Treating plants for disease control	24	3	316	34	585	63
Harvesting	55	6	504	54	366	40
Storing	51	6	442	48	432	46
Marketing	36	4	269	29	620	67
Preparing for market	40	4	252	27	633	68
Transporting	49	5	290	31	586	63
Producing hybrid and certified seed	2	0	62	7	861	93
Conducting plant breeding work	2	0	49	5	874	94
Processing	24	3	125	14	776	84
Inspecting	32	3	103	11	790	86
Grading	25	3	121	13	779	84
Pruning and training	16	2	236	26	673	73
Determining soil type	18	2	233	25	674	73

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
	NO.	%	NO.	%	NO.	%
Controlling brush	48	5	387	42	490	53
Caring for a woodlot	27	3	243	26	655	70
Working the soil	56	6	501	54	367	40
Managing pastures	16	2	303	33	603	65
Maintaining organic matter in the soil	35	4	364	39	526	57
Thinning fruit and plants	17	2	251	27	657	71
AREA: AGRICULTURAL MECHANICS (including related sales and services activities for each item)						
Using safety equipment and practices in mechanics work	606	66	242	26	77	9
Reconditioning and caring for hand tools	504	54	335	36	86	9
Maintaining, operating, and caring for power equipment	574	62	266	29	85	9
Performing carpentry or other work with wood	329	36	392	42	204	22
Performing cold metal work	292	32	229	25	404	44
Performing sheet metal work	264	29	189	20	472	51
Performing hot metal work	227	25	193	21	505	55
Performing masonry work	163	18	245	26	517	56
Performing concrete work	190	21	283	31	452	49
Performing plumbing work	180	19	280	30	465	50
Performing electrical wiring work	240	26	328	25	357	38
Servicing and repairing electric motors	169	18	207	22	549	60
Welding with oxy-acetylene gas (gas welding)	270	29	249	27	406	44
Welding with electricity (arc welding)	275	30	289	31	361	39

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
	NO.	%	NO.	%	NO.	%
Adjusting and/or assembling machinery	397	43	264	29	264	29
Repairing, operating, and maintaining machinery	432	47	302	33	191	21
Overhauling, maintaining, and using small engines	238	26	372	40	315	34
Overhauling, maintaining, and using tractors and stationary engines	217	23	293	32	415	45
Planning, installing and maintaining a drainage system	102	11	153	17	670	73
Planning and building conservation structures	56	6	110	12	759	82
Planning, installing, and maintaining an irrigation system	31	3	88	10	806	87
Planning and installing a water supply system	81	9	171	18	673	72
Planning and developing a mechanics shop	99	11	204	22	622	67
Using complex electrical controls	157	17	96	10	672	73
Planning and using automatic feed handling systems	35	4	66	7	824	89
Planning and building fences	64	7	402	43	459	50
Surveying	71	8	71	8	783	84
AREA: MANAGEMENT & OPERATION OF AGRICULTURAL BUSINESSES						
Keeping and using records	236	26	295	32	394	42
Preparing income and social security tax statements	207	22	347	38	371	40
Planning a cropping system	10	1	202	22	713	77
Planning a livestock system	11	1	190	21	124	78

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
	NO.	%	NO.	%	NO.	%
Developing and operating an agricultural recreation business	9	1	69	7	847	92
Planning and using a financial budget	115	12	321	35	489	53
Making a soil conservation plan	16	2	109	12	800	86
Working with government agricultural programs	24	3	105	11	796	86
Determining need for and extending or obtaining credit	99	11	279	30	547	59
Planning a marketing program	18	2	123	13	784	85
Using knowledge of agricultural law	34	4	260	28	631	68
Determining need for and selling or purchasing insurance	96	10	336	36	493	53
Determining need for and purchasing machinery and equipment	102	11	272	29	551	60
Determining need for and purchasing land and buildings	38	4	214	23	673	72
Managing a business	82	9	106	11	737	79
Assisting with managing a business	154	17	162	18	609	66
Determining soil capability	23	2	200	22	702	76
Planning a soil fertility program	11	1	198	21	716	78
Taking an inventory	289	31	192	21	444	48
Preparing or using a lease or agreement	79	9	168	18	678	73
Determining need for and securing employees	105	11	96	10	724	79
Managing employees	146	16	76	8	703	76
Contracting for production or other project	62	7	91	10	772	83
Planning for safety	374	40	203	22	348	37
Promoting sales	186	20	86	9	653	70

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD		USED, BUT NOT IN JOBS HELD		DID NOT USE	
AREA: GENERAL	NO.	%	NO.	%	NO.	%
Planning for and using community services (schools, churches, parks, etc.)	101	11	406	44	418	45
Raising food for home consumption	49	5	577	62	717	32
Planning and promoting wildlife conservation	42	5	328	35	555	60
Designing a landscape plan	31	3	174	19	720	78
Installing a landscape plan	46	5	147	16	732	79
Controlling environmental pollution	107	12	279	30	539	58
Average % of individuals using the item on the job.		9.9		27.2		62.8

TABLE 10

SUMMARY OF CONTENT USED BY 471 STUDENTS WHO EARNED THE MAJOR PORTION OF THEIR INCOME FROM AN AGRICULTURAL OCCUPATION IN RANK ORDER OF USE ON THE JOB BY CONTENT AREA

CONTENT - USE INVENTORY ITEM	USED IN OR BECAUSE OF JOBS HELD	
AREA: GUIDANCE & LEADERSHIP	NO.	%
Locating, applying for, and obtaining job	299	63
Explaining agriculture to an individual or group of people	199	42
Explaining farming to an individual or group of people	192	41
Becoming established in a business in a "self-employment" capacity	192	41
Explaining agricultural occupations to an individual or group of people	173	37
Serving as an active member of an organization or organized group	162	34
Participating in a public service activity	135	29
Using parliamentary procedure	109	23
Giving a talk before a group of people	104	22
Serving as a member or chairman of a committee	101	21
Planning a program of work for an organized group	96	20
Preparing a display or writing a news article	83	18
Conducting a meeting of a group of people	82	17
Serving as an officer of an organization	72	15
AREA: LIVESTOCK & POULTRY & THEIR PRODUCTS		
Providing, maintaining, and operating equipment	356	76
Feeding and caring for the young	339	72

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD	
	NO.	%
Feeding and caring for the producing flock or herd	324	69
Providing and maintaining housing	321	68
Feeding and caring for breeding flock or herd (at any age)	321	68
Treating for diseases or parasites	315	67
Purchasing feed and supplies	315	67
Planning for disease or parasite prevention and control	306	65
Feeding and caring for the market flock or herd	305	65
Identifying diseases or parasites	287	61
Identifying breeds and types	284	60
Selling	277	59
Preparing for sale	268	57
Selecting for sale	265	56
Planning and balancing rations	262	56
Selecting for purchase	259	55
Determining prices for purchase or sale	258	55
Purchasing	257	55
Transporting	255	54
Keeping and using enterprise records	242	51
Training and handling	241	51
Planning a breeding program and breeding	237	50
Judging	194	41
Milking	148	31
Shearing or clipping	130	28

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD	
	NO.	%
Identifying cuts of meat	122	26
Inspecting	119	25
Registering with breed association	115	24
Processing for market	110	23
Grading	106	23
Testing milk	45	10
AREA: PLANTS & SOILS		
Applying fertilizer	389	83
Harvesting	384	82
Planting seeds	382	81
Preparing soil for planting	377	80
Working the soil	375	80
Storing	371	79
Identifying seeds and plants	343	73
Selecting and purchasing fertilizer	332	70
Transporting	325	69
Planting seedlings and other plants	324	69
Buying and applying chemicals for insect control	323	69
Buying and applying chemicals for weed control	320	68
Maintaining organic matter in the soil	314	67
Controlling brush	313	66
Identifying weed seeds and plants	310	66
Managing pastures	300	64
Selecting and purchasing	295	63

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD	
	NO.	%
Preparing for market	292	62
Treating plants for disease control	291	62
Marketing	288	61
Identifying insects	287	61
Identifying plant diseases	285	61
Taking soil samples	257	55
Identifying nutrient deficiencies in plants	246	52
Determining price	232	49
Caring for a woodlot	216	46
Determining soil type	213	45
Interpreting soil tests	188	40
Blending or mixing fertilizer	181	38
Thinning fruit and plants	155	33
Drying	151	32
Judging	144	31
Pruning and training	142	30
Grading	133	28
Processing	126	27
Inspecting	123	26
Testing soil	115	24
Selling supplies and materials used for growing plants	106	23
Producing hybrid and certified seed	64	14
Propagating plants through grafting, layering, etc.	63	13
Conducting plant breeding work	35	7

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD	
AREA: AGRICULTURAL MECHANICS (including related sales and services activities for each item)	NO.	%
Maintaining, operating, and caring for power equipment	415	88
Using safety equipment and practices in mechanics work	411	87
Reconditioning and caring for hand tools	405	86
Repairing, operating, and maintaining machinery	402	85
Adjusting and/or assembling machinery	368	78
Performing carpentry or other work with wood	357	76
Planning and building fences	335	71
Overhauling, maintaining, and using tractors and stationary engines	327	69
Overhauling, maintaining, and using small engines	312	66
Performing cold metal work	277	59
Performing electrical wiring work	262	56
Welding with electricity (arc welding)	258	55
Performing concrete work	242	51
Performing plumbing work	223	47
Performing sheet metal work	221	47
Welding with oxy-acetylene gas (gas welding)	210	45
Performing masonry work	210	45
Performing hot metal work	197	42
Servicing and repairing electric motors	184	39
Planning, installing and maintaining a drainage system	180	38
Planning and developing a mechanics shop	179	38
Planning and installing a water supply system	163	35

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD	
	NO.	%
Planning and building conservation structures	141	30
Using complex electrical controls	132	28
Planning and using automatic feed handling systems	111	24
Planning, installing, and maintaining an irrigation system	88	19
Surveying	74	16
AREA: MANAGEMENT & OPERATION OF AGRICULTURAL BUSINESSES		
Planning for safety	359	76
Keeping and using records	324	69
Taking an inventory	288	61
Determining need for and purchasing machinery and equipment	272	58
Assisting with managing a business	272	58
Preparing income and social security tax statements	247	52
Planning a livestock system	222	47
Planning a cropping system	221	47
Determining soil capability	220	47
Determining need for and selling or purchasing insurance	216	46
Planning and using a financial budget	215	46
Managing employees	210	45
Planning a soil fertility program	210	45
Using knowledge of agricultural law	209	44
Promoting sales	200	42
Determining need for and extending or obtaining credit	199	42

CONTENT - USE INVENTORY ITEM	USED IN/OR BECAUSE OF JOBS HELD	
	NO.	%
Preparing or using a lease or agreement	199	42
Determining need for and securing employees	187	40
Working with government agricultural programs	186	39
Determining need for and purchasing land and buildings	174	37
Managing a business	166	35
Planning a marketing program	154	33
Making a soil conservation plan	131	28
Contracting for production or other project	131	28
Developing and operating an agricultural recreation business	45	10
AREA: GENERAL		
Raising food for home consumption	272	58
Planning for and using community services (schools, churches, parks, etc.)	192	41
Controlling environmental pollution	187	40
Planning and promoting wildlife conservation	174	37
Installing a landscape plan	94	20
Designing a landscape plan	78	17
Average % of individuals using items on the job		47.8

activities, they are indeed partly employed in farming. Under this classification scheme, 974 out of 1396 had engaged in an agricultural occupation. An additional 247 had been employed in occupations involving mechanics but not of an agricultural nature, e.g., Army mechanic, shipbuilder, and industrial engineer. Only 175 of those followed up or 12.5 percent were in neither classification.

8. What percent of those followed up had worked in related mechanics occupations which are not classified as agricultural?

Persons in this classification numbered 274 out of 1396 which is 18 percent.

9. Were those who studied Vocational Agriculture longer more likely to have used the items of content on the job?

The former students who were followed up were classified into those having two or less, three, four, and five or more years of agricultural instruction. The average percent of use of the 144 items of content on the job according to years of agriculture studied was: two years or less, 17.72 percent; three years, 17.01 percent; four years, 22.99 percent; and five years or more, 28.29 percent.

A comparison between those who had studied agriculture three years and those who had studied it four years revealed that on only three items out of 144 did three-year students exceed the use made by four-year students. A similar comparison between four-year students of agriculture and five-year students of agriculture revealed that on only five items of content out of 144 did four-year students exceed five year students. No distinct pattern emerged between two-year students and three-year students.

The percent of those followed up who used the items of content on the job by years of agriculture studied is in Table 11.

10. Did those who were classified as having earned more than half of their income from an agricultural occupation enroll for more years of agriculture?

The 470* individuals who earned the major portion of their income from an agricultural occupation had attended an average of .285 more of a school year than had the 925 who earned less than half of their income from an agricultural occupation. Note that eighth grade agriculture is common in Virginia. The first group averages over four years of agriculture. Also recall that students were excluded unless they had at least two years of agriculture. The group means, standard deviations and t-test values are presented in Table 12.

TABLE 12

COMPARISONS[a] OF THE YEARS OF AGRICULTURE STUDIED BY THOSE CLASSIFIED AS EARNING MORE THAN HALF OF INCOME FROM AN AGRICULTURAL OCCUPATION AND THOSE WHO DO NOT

GROUP	N	$\bar{X}$	SD
Over Half of Income from Agriculture	470	4.02	1.03
Less than Half of Income from Agriculture	925	3.73	1.12

[a] $t=4.51$ Sig.
$t_{.01}=2.576$
$df=1,393$

* One individual's card was missing from this group when this computer run was made.

(Narrative continued on page 73)

TABLE 11

PERCENT OF INDIVIDUALS THAT USED ITEMS OF CONTENT BY NUMBER OF YEARS OF VOCATIONAL AGRICULTURE STUDIED

N's =	160	287	551	398
CONTENT - USE INVENTORY ITEM	% of 2 or less yrs.	% of 3 yrs.	% of 4 yrs.	% of 5 or more yrs.
AREA: GUIDANCE & LEADERSHIP				
Locating, applying for, and obtaining job	59.0	67.0	64.0	66.0
Becoming established in a business in a "self employment" capacity	11.0	13.0	18.0	27.0
Serving as an active member of an organization or organized group	17.0	20.0	22.0	29.0
Using parliamentary procedure	16.0	13.0	16.0	20.0
Serving as a member or chairman of a committee	11.0	12.0	12.0	17.0
Serving as an officer of an organization	11.0	10.0	10.0	11.0
Conducting a meeting of a group of people	12.0	10.0	12.0	14.0
Planning a program of work for an organized group	13.0	16.0	13.0	16.0
Preparing a display or writing a news article	18.0	10.0	13.0	12.0
Giving a talk before a group of people	17.0	13.0	17.0	16.0
Participating in a public service activity	22.0	18.0	20.0	21.0
Explaining farming to an individual or group of people	13.0	12.0	20.0	29.0
Explaining agriculture to an individual or group of people	16.0	13.0	20.0	30.0
Explaining agricultural occupations to an individual or group of people	14.0	12.0	18.0	24.0
AREA: LIVESTOCK & POULTRY & THEIR PRODUCTS				
Identifying breeds and types	20.0	16.0	24.0	29.0
Judging	15.0	9.0	17.0	18.0

CONTENT - USE INVENTORY ITEM	% of 2 or less yrs.	% of 3 yrs.	% of 4 yrs.	% of 5 or more yrs.
Selecting for purchase	18.0	13.0	22.0	27.0
Determining prices for purchase or sale	18.0	14.0	22.0	28.0
Purchasing	16.0	15.0	22.0	27.0
Feeding and caring for breeding flock or herd (at any age)	15.0	18.0	26.0	33.0
Feeding and caring for the young	17.0	19.0	27.0	35.0
Feeding and caring for the producing flock or herd	17.0	19.0	26.0	33.0
Feeding and caring for the market flock or herd	16.0	18.0	25.0	31.0
Planning and balancing rations	13.0	13.0	21.0	28.0
Purchasing feed and supplies	15.0	16.0	25.0	31.0
Providing and maintaining housing	16.0	17.0	26.0	34.0
Providing, maintaining, and operating equipment	19.0	24.0	36.0	41.0
Planning for disease or parasite prevention and control	16.0	17.0	24.0	30.0
Treating for diseases or parasites	15.0	17.0	26.0	31.0
Identifying diseases or parasites	13.0	15.0	24.0	28.0
Training and handling	13.0	13.0	20.0	24.0
Preparing for sale	15.0	14.0	22.0	28.0
Selling	13.0	14.0	22.0	31.0
Selecting for sale	11.0	15.0	21.0	30.0
Planning a breeding program and breeding	9.0	11.0	18.0	25.0
Keeping and using enterprise records	13.0	13.0	20.0	25.0
Registering with breed association	2.0	7.0	9.0	12.0
Identifying cuts of meat	12.0	7.0	12.0	13.0

CONTENT - USE INVENTORY ITEM	% of 2 or less yrs.	% of 3 yrs.	% of 4 yrs.	% of 5 or more yrs.
Processing for market	13.0	6.0	8.0	14.0
Transporting	11.0	13.0	22.0	29.0
Inspecting	8.0	7.0	10.0	14.0
Grading	9.0	6.0	9.0	12.0
Testing milk	1.0	3.0	4.0	5.0
Milking	5.0	7.0	13.0	17.0
Shearing or clipping	4.0	6.0	11.0	15.0
Average % of use	12.84	12.97	19.81	25.1
AREA: PLANTS & SOILS				
Identifying seeds and plants	27.0	18.0	26.0	37.0
Selecting and purchasing	21.0	14.0	21.0	32.0
Judging	12.0	7.0	9.0	17.0
Determining price	21.0	10.0	17.0	27.0
Taking soil samples	15.0	11.0	21.0	26.0
Testing soil	8.0	6.0	8.0	12.0
Interpreting soil tests	10.0	8.0	16.0	19.0
Preparing soil for planting	23.0	20.0	31.0	40.0
Selecting and purchasing fertilizer	22.0	17.0	26.0	34.0
Applying fertilizer	25.0	20.0	32.0	40.0
Blending or mixing fertilizer	16.0	9.0	14.0	19.0
Identifying nutrient deficiencies in plants	18.0	11.0	18.0	24.0
Planting seeds	21.0	21.0	32.0	39.0
Planting seedlings and other plants	22.0	17.0	25.0	33.0
Propagating plants through grafting, layering, etc.	9.0	4.0	5.0	5.0

CONTENT - USE INVENTORY ITEM	% of 2 or less yrs.	% of 3 yrs.	% of 4 yrs.	% of 5 or more yrs.
Identifying weed seeds and plants	21.0	13.0	25.0	32.0
Selling supplies and materials used for growing plants	13.0	5.0	10.0	13.0
Buying and applying chemicals for weed control	20.0	16.0	26.0	33.0
Drying	12.0	8.0	11.0	14.0
Identifying insects	22.0	13.0	23.0	28.0
Buying and applying chemicals for insect control	21.0	14.0	26.0	34.0
Identifying plant diseases	21.0	12.0	22.0	29.0
Treating plants for disease control	22.0	13.0	23.0	30.0
Harvesting	22.0	21.0	32.0	42.0
Storing	20.0	21.0	30.0	41.0
Marketing	21.0	14.0	21.0	33.0
Preparing for market	22.0	15.0	22.0	34.0
Transporting	19.0	20.0	25.0	38.0
Producing hybrid and certified seed	4.0	4.0	5.0	5.0
Conducting plant breeding work	3.0	2.0	3.0	3.0
Processing	11.0	4.0	11.0	15.0
Inspecting	14.0	7.0	10.0	15.0
Grading	15.0	7.0	11.0	13.0
Pruning and training	13.0	5.0	13.0	13.0
Determining soil type	17.0	10.0	15.0	22.0
Controlling brush	21.0	15.0	27.0	34.0
Caring for a woodlot	14.0	10.0	19.0	22.0
Working the soil	26.0	22.0	32.0	39.0
Managing pastures	12.0	17.0	23.0	31.0

CONTENT - USE INVENTORY ITEM	% of 2 or less yrs.	% of 3 yrs.	% of 4 yrs.	% of 5 or more yrs.
Maintaining organic matter in the soil	20.0	16.0	27.0	31.0
Thinning fruit and plants	16.0	8.0	13.0	14.0
Average % of use	17.37	12.32	19.66	25.9
AREA: AGRICULTURAL MECHANICS (including related sales and services activities for each item)				
Using safety equipment and practices in mechanics work	62.0	73.0	72.0	79.0
Reconditioning and caring for hand tools	44.0	64.0	68.0	70.0
Maintaining, operating, and caring for power equipment	54.0	69.0	73.0	77.0
Performing carpentry or other work with wood	35.0	43.0	50.0	59.0
Performing cold metal work	27.0	37.0	42.0	47.0
Performing sheet metal work	21.0	31.0	34.0	45.0
Performing hot metal work	22.0	25.0	29.0	39.0
Performing masonry work	17.0	22.0	28.0	32.0
Performing concrete work	17.0	25.0	33.0	38.0
Performing plumbing work	18.0	21.0	31.0	36.0
Performing electrical wiring work	27.0	33.0	36.0	41.0
Servicing and repairing electric motors	27.0	23.0	25.0	27.0
Welding with oxy-acetylene gas (gas welding)	22.0	33.0	35.0	39.0
Welding with electricity (arc welding)	21.0	33.0	40.0	46.0
Adjusting and/or assembling machinery	39.0	52.0	56.0	62.0
Repairing, operating, and maintaining machinery	42.0	56.0	61.0	68.0
Overhauling, maintaining, and using small engines	31.0	35.0	41.0	44.0
Overhauling, maintaining, and using tractors and stationary engines	30.0	33.0	40.0	45.0

CONTENT - USE INVENTORY ITEM	% of 2 or less yrs.	% of 3 yrs.	% of 4 yrs.	% of 5 or more yrs.
Planning, installing and maintaining a drainage system	11.0	17.0	20.0	27.0
Planning and building conservation structures	11.0	9.0	14.0	20.0
Planning, installing, and maintaining an irrigation system	9.0	5.0	8.0	12.0
Planning and installing a water supply system	11.0	15.0	19.0	20.0
Planning and developing a mechanics shop	14.0	16.0	21.0	24.0
Using complex electrical controls	14.0	17.0	21.0	25.0
Planning and using automatic feed handling systems	8.0	8.0	10.0	14.0
Planning and building fences	19.0	20.0	30.0	37.0
Surveying	8.0	8.0	12.0	11.0
Average % of use	24.48	30.48	35.15	40.15
AREA: MANAGEMENT & OPERATION OF AGRICULTURAL BUSINESSES				
Keeping and using records	42.0	32.0	39.0	46.0
Preparing income and social security tax statements	34.0	29.0	30.0	38.0
Planning a cropping system	10.0	9.0	16.0	26.0
Planning a livestock system	8.0	11.0	17.0	24.0
Developing and operating an agricultural recreation business	3.0	3.0	4.0	4.0
Planning and using a financial budget	20.0	19.0	24.0	28.0
Making a soil conservation plan	9.0	6.0	11.0	14.0
Working with government agricultural programs	9.0	9.0	15.0	21.0
Determining need for and extending or obtaining credit	20.0	16.0	22.0	24.0
Planning a marketing program	11.0	7.0	12.0	18.0

CONTENT - USE INVENTORY ITEM	% of 2 or less yrs.	% of 3 yrs.	% of 4 yrs.	% of 5 or more yrs.
Using knowledge of agricultural law	9.0	10.0	19.0	25.0
Determining need for and selling or purchasing insurance	21.0	16.0	23.0	26.0
Determining need for and purchasing machinery and equipment	18.0	19.0	28.0	34.0
Determining need for and purchasing land and buildings	9.0	11.0	15.0	21.0
Managing a business	14.0	13.0	18.0	22.0
Assisting with managing a business	21.0	21.0	32.0	39.0
Determining soil capability	12.0	11.0	18.0	23.0
Planning a soil fertility program	12.0	8.0	15.0	25.0
Taking an inventory	33.0	36.0	42.0	47.0
Preparing or using a lease or agreement	13.0	14.0	19.0	28.0
Determining need for and securing employees	18.0	15.0	19.0	29.0
Managing employees	19.0	17.0	25.0	34.0
Contracting for production or other project	12.0	10.0	13.0	18.0
Planning for safety	46.0	46.0	54.0	59.0
Promoting sales	26.0	21.0	29.0	31.0
AREA: GENERAL				
Planning for and using community services (schools, churches, parks, etc.)	17.0	16.0	22.0	25.0
Raising food for home consumption	23.0	15.0	24.0	28.0
Planning and promoting wildlife conservation	13.0	10.0	16.0	20.0
Designing a landscape plan	6.0	6.0	9.0	8.0
Installing a landscape plan	7.0	10.0	11.0	10.0
Controlling environmental pollution	16.0	14.0	25.0	23.0
Average % of use	17.72	17.01	22.99	28.29

11. Did the 974 former students who held at least a part-time job in agriculture make more use of agricultural subject matter on the job than those who did not?

In addition to the 974 classified as having at least a part-time job in an agricultural occupation, 247 were classified as having had a full-time job in a mechanics occupation that was not agricultural and 175 individuals were outside either of the classifications.

The 974 individuals did use more of the subject matter items on the job than the other groups except for "locating, applying for, and obtaining a job" and 14 out of 27 items from the mechanics items which were used more on the job by more of the 247 classified as employed in mechanics jobs that are not agricultural. See Table 13.

12. What percent of those followed up enrolled for full-time post-secondary education of any kind?

Of the 1396 students in the study, 459 (32.87 percent) had attended school beyond high school.

13. What percent of those followed up enrolled for full-time post-secondary education in agriculture?

Of the 1396 students in the study, 210 (15.04 percent) had attended a post-secondary institution full time and had studied agriculture.

(Narrative continued on page 82)

TABLE 13

PERCENT OF INDIVIDUALS CLASSIFIED AS HOLDING AN AGRICULTURAL JOB, A MECHANICAL BUT NOT AGRICULTURAL, AND NEITHER AGRICULTURAL NOR MECHANICAL WHO USED VARIOUS ITEMS OF CONTENT ON THE JOB.

N = 1396

CONTENT - USE INVENTORY ITEM	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD		
	Classification[1] and N		
AREA: GUIDANCE & LEADERSHIP	Agr. (974)	Mech. (247)	Others (175)
Locating, applying for, and obtaining job	65[2]	68	57
Becoming established in a business in a "self-employment" capacity	24	11	3
Serving as an active member of an organization or organized group	26	20	11
Using parliamentary procedure	18	15	11
Serving as a member or chairman of a committee	16	9	5
Serving as an officer of an organization	12	6	6
Conducting a meeting of a group of people	14	11	6
Planning a program of work for an organized group	17	11	7
Preparing a display or writing a news article	15	9	7
Giving a talk before a group of people	18	11	9
Participating in a public service activity	22	17	12
Explaining farming to an individual or group of people	27	8	2
Explaining agriculture to an individual or group of people	28	8	2

[1] Classifications:
Agr. - Agricultural employment
Mech. - Mechanical, but not agricultural employment

[2] Percent of individuals, rounded to whole numbers who used the item of content on the job.

CONTENT - USE INVENTORY ITEM	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD		
	Classification and N		
	Agr. (974)	Mech. (247)	Others (175)
Explaining agricultural occupations to an individual or group of people	24	7	2
AREA: LIVESTOCK & POULTRY & THEIR PRODUCTS			
Identifying breeds and types	33	2	2
Judging	22	0	1
Selecting for purchase	29	2	1
Determining prices for purchase or sale	30	2	3
Purchasing	29	3	2
Feeding and caring for breeding flock of herd (at any age)	36	2	1
Feeding and caring for the young	38	1	2
Feeding and caring for the producing flock or herd	36	2	1
Feeding and caring for the market flock or herd	34	2	0
Planning and balancing rations	29	2	0
Purchasing feed and supplies	34	1	0
Providing and maintaining housing	35	3	2
Providing, maintaining, and operating equipment	43	13	4
Planning for disease or parasite prevention and control	33	1	1
Treating for diseases or parasites	34	1	1
Identifying diseases or parasites	31	1	1
Training and handling	26	1	0
Preparing for sale	30	1	1
Selling	31	2	1

CONTENT - USE INVENTORY ITEM	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD		
	Classification and N		
	Agr. (974)	Mech. (247)	Others (175)
Selecting for sale	29	2	1
Planning a breeding program and breeding	25	0	1
Keeping and using enterprise records	27	2	1
Registering with breed association	12	0	0
Identifying cuts of meat	15	2	3
Processing for market	14	0	1
Transporting	28	4	3
Inspecting	13	2	1
Grading	12	1	1
Testing milk	5	0	1
Milking	17	1	0
Shearing or clipping	15	0	1
AREA: PLANTS & SOILS			
Identifying seeds and plants	39	4	2
Selecting and purchasing	32	2	1
Judging	16	0	1
Determining price	26	3	1
Taking soil samples	28	0	0
Testing soil	12	0	0
Interpreting soil tests	20	1	0
Preparing soil for planting	43	2	2
Selecting and purchasing fertilizer	37	2	1
Applying fertilizer	44	3	1

CONTENT - USE INVENTORY ITEM	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD		
	Classification and N		
	Agr. (974)	Mech. (247)	Others (175)
Blending or mixing fertilizer	20	1	1
Identifying nutrient deficiencies in plants	26	2	0
Planting seeds	43	3	2
Planting seedlings and other plants	36	2	1
Propagating plants through grafting, layering, etc.	7	1	1
Identifying weed seeds and plants	34	2	0
Selling supplies and materials used for growing plants	13	2	1
Buying and applying chemicals for weed control	36	1	0
Drying	16	0	0
Identifying insects	31	2	2
Buying and applying chemicals for insect control	36	1	2
Identifying plant diseases	31	0	0
Treating plants for disease control	32	4	2
Harvesting	44	4	2
Storing	42	3	2
Marketing	32	3	2
Preparing for market	33	3	3
Transporting	37	5	3
Producing hybrid and certified seed	7	0	0
Conducting plant breeding work	4	0	0
Processing	15	2	1
Inspecting	15	3	1
Grading	16	2	1

CONTENT - USE INVENTORY ITEM	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD		
	Classification and N		
	Agr. (974)	Mech. (247)	Others (175)
Pruning and tranining	16	0	1
Determining soil type	24	0	0
Controlling brush	36	3	2
Caring for a woodlot	24	4	0
Working the soil	43	2	3
Managing pastures	32	0	1
Maintaining organic matter in the soil	36	0	1
Thinning fruit and plants	18	0	0
AREA: AGRICULTURAL MECHANICS (including related sales and services activities for each item)			
Using safety equipment and practices in mechanics work	73	87	54
Reconditioning and caring for hand tools	66	83	36
Maintaining, operating, and caring for power equipment	71	88	46
Performing carpentry or other work with wood	53	54	21
Performing cold metal work	43	53	13
Performing sheet metal work	35	49	10
Performing hot metal work	31	44	7
Performing masonry work	30	29	3
Performing concrete work	35	34	6
Performing plumbing work	32	34	6
Performing electrical wiring work	39	44	7
Servicing and repairing electric motors	27	32	6
Welding with oxy-acetylene gas (gas welding)	34	54	9

CONTENT - USE INVENTORY ITEM	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD		
	Classification and N		
	Agr. (974)	Mech. (247)	Others (175)
Welding with electricity (arc welding)	40	52	10
Adjusting and/or assembling machinery	58	70	17
Repairing, operating, and maintaining machinery	64	72	21
Overhauling, maintaining, and using small engines	44	43	11
Overhauling, maintaining, and using tractors and stationary engines	45	38	9
Planning, installing, and maintaining a drainage system	24	21	1
Planning and building conservation structures	18	9	0
Planning, installing, and maintaining an irrigation system	11	6	1
Planning and installing a water supply system	20	18	2
Planning and developing a mechanics shop	23	22	1
Using complex electrical controls	22	27	5
Planning and using automatic feed handling systems	13	6	1
Planning and building fences	39	8	2
Surveying	12	11	2
AREA: MANAGEMENT & OPERATION OF AGRICULTURAL BUSINESSES			
Keeping and using records	46	33	19
Preparing income and social security tax statements	37	29	14
Planning a cropping system	24	0	0
Planning a livestock system	24	0	0
Developing and operating an agricultural recreation business	5	2	0

CONTENT - USE INVENTORY ITEM	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD		
	Classification and N		
	Agr. (974)	Mech. (247)	Others (175)
Planning and using a financial budget	28	17	9
Making a soil conservation plan	14	3	0
Working with government agricultural programs	20	4	1
Determining need for and extending or obtaining credit	25	15	7
Planning a marketing program	17	3	0
Using knowledge of agricultural law	23	6	1
Determining need for and selling or purchasing insurance	27	15	8
Determining need for and purchasing machinery and equipment	33	22	1
Determining need for and purchasing land and buildings	20	6	1
Managing a business	21	13	6
Assisting with managing a business	37	21	10
Determining soil capability	24	4	0
Planning a soil fertility program	22	1	1
Taking an inventory	45	40	24
Preparing or using a lease or agreement	24	15	3
Determining need for and securing employees	24	19	6
Managing employees	29	21	13
Contracting for production or other project	17	11	2
Planning for safety	58	51	25
Promoting sales	31	24	14
AREA: GENERAL			
Planning for and using community services (schools, churches, parks, etc.)	26	11	8

CONTENT - USE INVENTORY ITEM	% OF ITEMS USED IN/OR BECAUSE OF JOBS HELD		
	Classification and N		
	Agr. (974)	Mech. (247)	Others (175)
Raising food for home consumption	31	4	2
Planning and promoting wildlife conservation	21	5	1
Designing a landscape plan	10	5	0
Installing a landscape plan	12	8	1
Controlling environmental pollution	25	15	9

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

In an effort to determine the use made of subject matter content normally taught in the Vocational Agriculture curriculum in Virginia, vocational agriculture teachers in all high schools were asked to follow-up, during the summer and fall of 1972, the students in the graduating class of 1971 and one other year--1968, 1969, or 1970. The additional group to be followed up was determined by random assignment of schools within the six supervisory areas.

Data were collected through personal interviews of former students by teachers of agriculture. The instrument contained 144 items of subject-matter content to which the former students indicated that they either "used on the job," "used but not on the job," or "did not use." Other items of information collected were number of years of agriculture studied, agricultural options studied, jobs held, year of graduation and attendance at post-secondary institutions.

Approximately one-third of the former students were followed up. They were followed up in sixty-eight percent of the high schools. No claim is made that those followed up were representative. Participating schools were more likely to be those schools where at least one teacher had been employed for several years. It was very difficult for a new teacher in a single teacher department to follow up graduates.

The study and the procedures for collecting data were explained at the annual teacher's conference and questionnaires were distributed. The completed instruments were delivered to VPI & SU for summary. All

information was collected between the time of the conference in July, 1972, and the end of that calendar year. Most of the information was collected during August. Summaries by schools, by administrative areas, and for the State were made. Each school was sent a summary of use made of subject-matter content by its former students. Teachers in five of the six areas were given assistance at area teachers' meetings in ascertaining the implications of the information. Area and State summaries of information were also distributed to teachers, area supervisors, and state supervisors.

Analyses of information other than the use of subject-matter content were made for the complete research report.

The study of content used by former students was focused primarily on use on the job although information concerning use other than on the job was collected. The reader is reminded that if an item was used both on the job and off the job, the "used on the job" column was checked. The presence of a "used but not in job held" column may be seen as an attempt to justify vocational education for avocational purposes. It is a recognition that instruction that is useful in off-the-job situations is not wasted. Knowledge and skills gained in school that are useful in maintaining the lawn and garden, the residence, and in maintaining and using related tools and machinery cannot be considered to be wasted.

Even though the information was collected, less attention was given to use made of subject-matter content off the job than was the case in the study by Crunkilton. Dr. Crunkilton used a weighting in which use off the job was given one-half the weight of use on the job. Greater faith seemed to be shown in the approach as a way of determining what

should be taught. The approach is more useful as a way to show accountability of the general curriculum rather than a way to ascertain competencies needed.

Finding that an item of subject-matter content is not used is not evidence that it should be excluded. The item, "selling supplies and materials used for growing plants," was used very little. Non-use was very likely due to the fact that it was taught in few high schools and students were not getting jobs in the kind of agribusiness where the item of subject-matter content could be used. Yet, teachers and others would generally agree that it should be taught. A content-use inventory as a means of curriculum adjustment is useful only on an individual school basis to the teacher who knows what was taught, who was interviewed, and what jobs the individuals held.

The items of content used by more individuals were those in the category of agricultural mechanics. The high number of individuals using it could be because mechanics is emphasized in the Virginia program. It could be because America is highly industrialized and labor saving devices are found in almost every occupation and certainly around every home.

The items of subject-matter content used on the job by at least one-third of the respondents in the order of the highest to lowest number of individuals using them were: (1) using safety equipment and practices in mechanics work, (2) maintaining, operating and caring for power equipment, (3) reconditioning and caring for handtools, (4) locating, applying for and obtaining a job, (5) repairing, operating and maintaining machinery, (6) adjusting and or assembling machinery, (7) planning for safety

(management), (8) performing carpentry and other work with wood, (9) performing cold metal work, (10) taking an inventory, (11) keeping and using records, (12) overhauling, maintaining, and using small engines, (13) overhauling, maintaining, and using tractors and stationary engines, (14) welding with electricity (arc welding), (15) performing electrical wiring, (16) performing sheet metal work, (17) welding with oxy-acetylene gas (gas welding), and (18) providing, maintaining and operating equipment (livestock).

Locating and applying for a job was not first in the ranking because of the amount of self-employment by those surveyed. Those who become established in farming gradually do so and do not need to apply for a job. Employment by the military services, especially by draftees, did not entail the use of job application skills.

Taking an inventory and keeping and using records were the only items in addition to locating and applying for a job that appeared in the list used by the most people which were not in the category of mechanics. These two items, like all the others among these eighteen items of subject-matter content, are ones used in many different occupations which might account for the higher number of individuals using them.

These basic knowledges and skills are important and should be a part of the curriculum and so should many others. Perhaps if ten percent of former students use the items they should be considered to be important for the general or basic agriculture curriculum. This is a general statement and there would be exceptions where justification can be made.

The list of items used by less than ten percent of individuals on the

job numbered thirteen. Ten percent was an arbitrary point as was the point selected for a cut-off point for the eighteen items used most by individuals on the job. The thirteen items of subject-matter content used by less than ten percent of individuals on the job in the order of least to most individuals using them were: (1) conducting plant breeding work, (2) developing and operating an agricultural recreation business, (3) testing milk, (4) producing hybrid and certified seed, (5) propagating plants through grafting and layering, (6) designing a landscape plan, (7) planning, installing and maintaining an irrigation system, (8) testing soil, (9) registering with breed association, (10) grading (livestock), (11) inspecting (livestock), (12) selling supplies and materials used for growing plants, and (13) processing for market (livestock).

Many teachers felt that soil testing and milk testing should not have been on the instrument in the first place. Another study to relate content taught to content used was conducted as a result of the feelings that several of the items with low usage were not taught by teachers.

The items in the above list are not very important in the general or basic courses but their importance to some students in specialized programs should not be questioned as a result of the findings of this study.

The content used by former students who were "fully" employed in an agricultural occupation had the most implications for curriculum adjustment. The former students were classified according to their job title and other information in the questionnaire into two groups, those earning over half of their income from an agricultural occupation and those earning less than half of their income from an agricultural occupation.

A former student who lived at home on a farm and worked but had a full-time job in a textile plant would be classified as earning less than half of his income from an agricultural occupation. Decisions concerning what was or was not an agricultural occupation were based on a general background of the USOE Standard Terminology for Curriculum and Instruction in Local and State School Systems and the kind of activities performed on the job.

Those classified as earning more than half of their income from an agricultural occupation were 471 out of 1396 or 33.7 percent of the former students whose data were analyzed in the study. Five hundred and three other individuals had been employed in an agricultural occupation but were not classified as having earned over half of their income from an agricultural occupation. Information which might influence curriculum adjustment should be based on the questionnaires of those who are fully employed in an agricultural occupation.

Every individual cannot use every item. In fact it is possible for an individual to earn all of his income from an agricultural occupation yet check very few of the 144 items of subject-matter content. The results of the summary for the 471 individuals are felt to make an acceptable standard for comparison for information from individual schools or future studies in which the same instrument is used.

Certain items of subject-matter content, especially those having to do with club activities were believed to be less used by very recent graduates and more used by individuals who had been out of school longer. Because individuals from the 1968 through 1972 graduating classes were included in the study, an effort was made to determine whether or not

the group that had been out of school longest made more use of certain kinds of subject-matter content than the others.

Summaries of the content used on the job were made by year of graduation for the group that earned more than half of their income from an agricultural occupation and for those who earned less than half of their income from an agricultural occupation.

A detailed analysis was not made of the information. The analysis was made for the two classifications of former students being discussed, but the information for the two groups was not combined. Conclusions must be made by observing the tables.

Activities having to do with clubs such as being an active member, using parliamentary procedure, serving on a committee, serving as an officer, conducting a meeting, and planning a club program of work seemed to be used most by the 1968 group and the 1972 group. The 1972 group was small and was not intended to be followed up, but some teachers did send in data on them. If the 1972 information is disregarded, the use made on the job by 1968 graduates exceeds each of the other years for the 471 individuals and for the remaining 925 on each of the club related activities listed above. The progressive increase in use as years out of school increased was more evident for the 925 who did not earn over half of their income from an agricultural occupation. The extent of use of club related activities by the most recent graduates was less for the 925 than for the 471 who earned over half of their income from an agricultural occupation. A possible explanation might be that the group of 471 contained more former students who were maintaining their membership in the Future Farmers of America.

A discussion of all the subject-matter items will not be made, but greater use by those who have been out of school longer is evident for most all of the items. It should be noted that former students answered only for the jobs held at the time of the interview. The answer was not intended to be accumulative for all jobs held since leaving school. On only eleven out of 144 items did the number of individuals in the 1971 class who used the item on the job exceed the number of individuals using the item on the job in the 1968 class. (This information concerns the 471 individuals who earned more than half of their income from an agricultural occupation.) There were 20 out of 144 items on which use by the 1971 group exceeded use by the 1968 group for the remaining 925 individuals.

It was not surprising to learn that use of subject-matter content on the job by the group classified as having earned over half of their income from an agricultural occupation exceeded that of the remainder of those followed up. The items used influenced the classification in the first place. When all questionnaire items were considered, the average percent of individuals who used them on the job in the group of 471 was 43 percent and the average use by the 925 was 10 percent. Only one item of subject-matter content out of the 144 items was used by a greater percent of individuals on the job in the group of 925 than in the group of 471. That item was "locating, applying for and obtaining a job."

Although only about one-third of those followed up were classified as earning over half of their income from an agricultural occupation, 70 percent of those followed up had worked at least part time in an agricultural occupation and another 18 percent had worked in related mechanics occupations that were not classified as agricultural. Approximately 88%

of those followed up had used a considerable amount of the subject-matter content on the job.

Use of content on the job increased with increased years of agriculture studied except between two years of study and three years of study. This statement is true for nearly every one of the 144 items of subject-matter content for three through five years of study.

The average number of years of vocational agriculture studied by the 471 individuals classified as earning over half of their income from agricultural employment exceed that of the remainder of those followed up by .285 of a school year which was significant in a practical and statistical way. This finding could indicate the presence of decision making concerning careers during high school.

The 974 former students classified as having at least a part-time job in agriculture were compared with the 247 former students who had mechanics jobs and with the remaining 175 that had not been employed in an agricultural or related mechanics job as to the percentage who had used the various items of subject-matter content. More of the 974 individuals did use the subject-matter items on the job than the other groups except for "locating, applying for, and obtaining a job" and 14 out of 27 items from the mechanics items which were used more on the job in the group of 247 that was classified as being employed in mechanics jobs that are not agricultural.

Approximately half of the individuals who enrolled full time in post-secondary institutions had done so in agriculture programs. Of the 1396 students in the study, 459 (32.87 percent) had attended post-secondary institutions and 210 (15.04 percent) had enrolled in agricultural

programs. The percentage of the total that went on to school as a full-time student was considered to be low. It was felt that many more than half of those studying full time beyond high school should be studying agriculture. Perhaps the limited number of post-secondary institutions offering agriculture is partly the reason. A limited number of elective subjects in the small high schools could have forced students to study a subject for which they had no occupational interest.

Conclusions

1. Use of agricultural subject-matter content usually taught in Virginia high schools by those followed up was considered to be high when considering on-the-job and off-the-job use.
2. A suitable standard or goal for use of subject-matter content on the job by graduates from Vocational Agriculture was established by those classified as having earned over half of their income from an agricultural occupation.
3. Subject matter taught in Vocational Agriculture in Virginia was used for avocational purposes as well as vocational purposes.
4. The agricultural mechanics subject matter as a category was used by more individuals than any other category of subject matter. This fact does not lessen the importance of other categories of subject matter.
5. The key to improved use of content is occupational guidance. If the students who study Vocational Agriculture get jobs in agriculture, the use of content will be high.
6. The process involved in the content-use model as a means of follow-up is more valuable than the findings of such a study. Other models are more useful for curriculum adjustment.

7. Former vocational agriculture students who earned over half of their income from an agricultural occupation had studied more years of agriculture.
8. Slightly more graduates who were followed up continued their full-time post-secondary education in non-agricultural curriculums than agricultural curriculums.
9. The content-use portion of this study is much more meaningful on an individual school basis than an area or state summary. If the teacher taught the student, interviewed him and is familiar with his place of employment and his job there, the implications of the information are clearer.

Recommendations

1. The content-use model for follow-up should be used periodically instead of regularly. Interviews of former students by teachers in which students are asked if they use what is taught is productive in terms of an awareness of the need for relevancy.
2. In addition to the subject-matter content from the basic curriculum, an additional list of subject-matter content for the specialized (option) areas of the former student should be used when the study is repeated.
3. A means to assess the intensity of use of an item should be provided for in the content-use model. The response given to an item used daily is identical to the response to an item used only once.
4. Occupational orientation, exploration, and all the aspects of good career guidance along with closely supervised occupational experience programs that are oriented toward establishment in an occupation and

a school placement service is recommended to improve the amount of content used on the job by the graduates of our programs.

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APPENDIX A

QUESTIONNAIRE

CONTENT - USE INVENTORY FORM

Instructions. Complete a copy during the summer for each student who completed one or more years in one of the options in agricultural education and who left or was graduated from high school one year earlier. (Example: Complete a copy of the form during the summer of 1972 for each former student who left or was graduated from high school during the 1970-71 school year.) Also complete a copy for each former student in classes designated to be followed-up by your vocational agriculture department two, three, or four years after leaving high school. (See schedule of classes to be followed-up by your department.) Send completed forms to your area supervisor of agricultural education by September 1 of each year. See special instructions for follow-up of the disadvantaged.

Name of High School _____

Address: _____

Student's Name _____ Calendar year student left high school _____

On the lines provided, write the number of years the student completed in each of the courses and options:

Options and Courses	No. Years Completed
Agricultural Science and Mechanics I and II Courses	_____
Agricultural Production Option	_____
Agricultural Business Option	_____
Agricultural Machinery Service Option	_____
Conservation and Forestry Option	_____
Ornamental Horticulture Option	_____
Program for Disadvantaged (Special Program)	_____

Title of Each Job Held After Leaving High School*	Date started	Date left
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Name and address of each school attended after leaving high school	Curriculum or Course in which enrolled
_____	_____
_____	_____
_____	_____

* Use back of this form if additional space is needed.

Directions: Below are selected knowledges and abilities a student may have learned while studying vocational agriculture. Please put an (X) in the proper column for each content item listed to indicate the use of the item by the former student in any way since he left school - performed, helped perform, explained to someone, or supervised someone who performed it.

Content - Use Inventory Item	Used in/or because of jobs held	Used, but not in jobs held	Did not use
Area: Guidance and Leadership			
1. Locating, applying for, and obtaining job	_____	_____	_____
2. Becoming established in a business in a "self-employment" capacity	_____	_____	_____
3. Serving as an active member of an organization or organized group	_____	_____	_____
4. Using parliamentary procedure	_____	_____	_____
5. Serving as a member or chairman of a committee	_____	_____	_____
6. Serving as an officer of an organization	_____	_____	_____
7. Conducting a meeting of a group of people	_____	_____	_____
8. Planning a program of work for an organized group	_____	_____	_____
9. Preparing a display or writing a news article	_____	_____	_____
10. Giving a talk before a group of people	_____	_____	_____
11. Participating in a public service activity	_____	_____	_____
12. Explaining farming to an individual or group of people	_____	_____	_____
13. Explaining agriculture to an individual or group of people	_____	_____	_____
14. Explaining agricultural occupations to an individual or group of people	_____	_____	_____

Content - Use Inventory Item	Used in/or because of jobs held	Used, but not in jobs held	Did not use

Area: Livestock and Poultry and Their Products

Place a check mark before each of the following with which you had either direct or indirect contact in your work or in other activity since leaving high school.

_____ Beef	_____ Sheep	_____ Ducks
_____ Dairy	_____ Swine	_____ Geese
_____ Horses	_____ Chickens	_____ Turkeys
_____ Wildlife (animals and birds)	_____ Other animal or specialty (list) _____	
_____ Sales and services related to area		

15.	Identifying breeds and types	_____	_____	_____
16.	Judging	_____	_____	_____
17.	Selecting for purchase	_____	_____	_____
18.	Determining prices for purchase or sale	_____	_____	_____
19.	Purchasing	_____	_____	_____
20.	Feeding and caring for breeding flock or herd (at any age)	_____	_____	_____
21.	Feeding and caring for the young	_____	_____	_____
22.	Feeding and caring for the producing flock or herd	_____	_____	_____
23.	Feeding and caring for the market flock or herd	_____	_____	_____
24.	Planning and balancing rations	_____	_____	_____
25.	Purchasing feed and supplies	_____	_____	_____
26.	Providing and maintaining housing	_____	_____	_____
27.	Providing, maintaining, and operating equipment	_____	_____	_____
28.	Planning for disease or parasite prevention and control	_____	_____	_____
29.	Treating for diseases or parasites	_____	_____	_____

Content - Use Inventory Item	Used in/or because of jobs held	Used, but not in jobs held	Did not use
30. Identifying diseases or parasites	_____	_____	_____
31. Training and handling	_____	_____	_____
32. Preparing for sale	_____	_____	_____
33. Selling	_____	_____	_____
34. Selecting for sale	_____	_____	_____
35. Planning a breeding program and breeding	_____	_____	_____
36. Keeping and using enterprise records	_____	_____	_____
37. Registering with breed association	_____	_____	_____
38. Identifying cuts of meat	_____	_____	_____
39. Processing for market	_____	_____	_____
40. Transporting	_____	_____	_____
41. Inspecting	_____	_____	_____
42. Grading	_____	_____	_____
43. Testing milk	_____	_____	_____
44. Milking	_____	_____	_____
45. Shearing or clipping	_____	_____	_____

Area: Plants and Soils

Place a check mark before each of the following with which you have had either direct or indirect contact in your work or in other activity since leaving high school.

_____ Field crops

_____ Forage crops

_____ Fruit crops

_____ Vegetable crops

_____ Turf

_____ Wildlife (plants)

_____ Specialty crops (list) _____

_____ Nursery products

_____ Greenhouse products

_____ Forest products

_____ Soils and fertilizer

_____ Water

_____ Sales and services related to area

Content - Use Inventory Item	Used in/or because of jobs held	Used, but not in jobs held	Did not use
46. Identifying seeds and plants	_____	_____	_____
47. Selecting and purchasing	_____	_____	_____
48. Judging	_____	_____	_____
49. Determining price	_____	_____	_____
50. Taking soil samples	_____	_____	_____
51. Testing soil	_____	_____	_____
52. Interpreting soil tests	_____	_____	_____
53. Preparing soil for planting	_____	_____	_____
54. Selecting and purchasing fertilizer	_____	_____	_____
55. Applying fertilizer	_____	_____	_____
56. Blending or mixing fertilizer	_____	_____	_____
57. Identifying nutrient deficiencies in plants	_____	_____	_____
58. Planting seeds	_____	_____	_____
59. Planting seedlings and other plants	_____	_____	_____
60. Propagating plants through grafting, layering, etc.	_____	_____	_____
61. Identifying weed seeds and plants	_____	_____	_____
62. Selling supplies and materials used for growing plants	_____	_____	_____
63. Buying and applying chemicals for weed control	_____	_____	_____
64. Drying	_____	_____	_____
65. Identifying insects	_____	_____	_____
66. Buying and applying chemicals for insect control	_____	_____	_____
67. Identifying plant diseases	_____	_____	_____
68. Treating plants for disease control	_____	_____	_____

Content - Use Inventory Item	Used in/or because of jobs held	Used, but not in jobs held	Did not use
69. Harvesting			
70. Storing			
71. Marketing			
72. Preparing for market			
73. Transporting			
74. Producing hybrid and certified seed			
75. Conducting plant breeding work			
76. Processing			
77. Inspecting			
78. Grading			
79. Pruning and training			
80. Determining soil type			
81. Controlling brush			
82. Caring for a woodlot			
83. Working the soil			
84. Managing pastures			
85. Maintaining organic matter in the soil			
86. Thinning fruit and plants			
Area: Agricultural Mechanics (including related sales and services activities for each item)			
87. Using safety equipment and practices in mechanics work			
88. Reconditioning and caring for hand tools			
89. Maintaining, operating, and caring for power equipment			
90. Performing carpentry or other work with wood			

Content - Use Inventory Item	Used in/or because of jobs held	Used, but not in jobs held	Did not use
91. Performing cold metal work			
92. Performing sheet metal work			
93. Performing hot metal work			
94. Performing masonry work			
95. Performing concrete work			
96. Performing plumbing work			
97. Performing electrical wiring work			
98. Servicing and repairing electric motors			
99. Welding with oxy-acetylene gas (gas welding)			
100. Welding with electricity (arc welding)			
101. Adjusting and/or assembling machinery			
102. Repairing, operating, and maintaining machinery			
103. Overhauling, maintaining, and using small engines			
104. Overhauling, maintaining, and using tractors and stationary engines			
105. Planning, installing and maintaining a drainage system			
106. Planning and building conservation structures			
107. Planning, installing, and maintaining an irrigation system			
108. Planning and installing a water supply system			
109. Planning and developing a mechanics shop			
110. Using complex electrical controls			
111. Planning and using automatic feed handling systems			

Content - Use Inventory Item	Used in/or because of jobs held	Used, but not in jobs held	Did not use
112. Planning and building fences	_____	_____	_____
113. Surveying	_____	_____	_____

Area: Management and Operation of Agricultural Businesses

Place a check mark before each of the following types of businesses with which you have had either direct or indirect management responsibilities in your work or in other activity since leaving school.

_____ Farm

_____ Greenhouse

_____ Nursery

_____ Machinery and equipment

_____ Agricultural processing and marketing

_____ Supplies and services

_____ Recreation and wildlife

_____ Forestry

_____ Other businesses (please specify) _____

114. Keeping and using records	_____	_____	_____
115. Preparing income and social security tax statements	_____	_____	_____
116. Planning a cropping system	_____	_____	_____
117. Planning a livestock system	_____	_____	_____
118. Developing and operating an agricultural recreation business	_____	_____	_____
119. Planning and using a financial budget	_____	_____	_____
120. Making a soil conservation plan	_____	_____	_____
121. Working with government agricultural programs	_____	_____	_____
122. Determining need for and extending or obtaining credit	_____	_____	_____
123. Planning a marketing program	_____	_____	_____
124. Using knowledge of agricultural law	_____	_____	_____
125. Determining need for and selling or purchasing insurance	_____	_____	_____
126. Determining need for and purchasing machinery and equipment	_____	_____	_____

Content - Use Inventory Item	Used in/or because of jobs held	Used, but not in jobs held	Did not use
127. Determining need for and purchasing land and buildings			
128. Managing a business			
129. Assisting with managing a business			
130. Determining soil capability			
131. Planning a soil fertility program			
132. Taking an inventory			
133. Preparing or using a lease or agreement			
134. Determining need for and securing employees			
135. Managing employees			
136. Contracting for production or other project			
137. Planning for safety			
138. Promoting sales			
Area: General			
139. Planning for and using community services (schools, churches, parks, etc.)			
140. Raising food for home consumption			
141. Planning and promoting wildlife conservation			
142. Designing a landscape plan			
143. Installing a landscape plan			
144. Controlling environmental pollution			
145. Other (specify) _____			
_____			
_____			